



**WALKER**  
PARKING CONSULTANTS

SUPPLY/DEMAND AND ALTERNATIVES  
ANALYSIS

PHASE II MAIN STREET  
RECONSTRUCTION  
PARKING STUDY  
NEWMARKET, NEW HAMPSHIRE

Prepared for:  
Town of Newmarket





**WALKER**  
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November 17, 2006

Julie Glover, Project Coordinator  
Town of Newmarket  
186 Main Street  
Newmarket, NH 03857

Re: *Final Report*  
*Phase II Main Street Reconstruction Parking Study*  
*Newmarket, NH*

Dear Ms. Glover:

Walker Parking Consultants is pleased to submit this report of our analysis regarding parking alternatives for the Town of Newmarket, New Hampshire. This report presents a summary of certain inquiries, facts and conclusions that are intended to assist you in various decisions associated with planning for parking within the central business district.

We appreciate the opportunity to be of service to you in this project. If you have any questions or comments, please do not hesitate to call.

Respectfully Submitted,

WALKER PARKING CONSULTANTS

Jonathan Efroymsen  
Parking Consultant

Andrew S. Hill  
Project Manager



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SUPPLY/DEMAND AND  
ALTERNATIVES ANALYSIS

**PHASE II MAIN  
STREET  
RECONSTRUCTION  
PARKING STUDY  
NEWMARKET, NH**

Prepared for:  
TOWN OF NEWMARKET

PROJECT # 16-1870.00

NOVEMBER 17, 2006

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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PROJECT # 16-1870.00

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Walker Parking Consultants was retained by the Town of Newmarket to perform a needs assessment of the Central Business District (CBD). Walker's initial charge was to develop a supply/demand analysis of the CBD to determine current and future parking needs.

Walker inventoried 1,037 total spaces within the study area. The Town of Newmarket and other public agencies provide a total of 469 spaces within the study area, roughly 40% of the total supply. Curbside parking, limited to two-hours or less, represents the smallest portion of the public supply with only 78 spaces. The other 707 spaces are owned privately. Use of these facilities is fairly evenly distributed between lots owned by businesses for employee and customer parking (233 spaces), lots serving multiple unit residences (251 spaces) and residential driveways and garages (223 spaces).

When the optimum utilization factor is applied to the inventory, the *effective parking supply* is rendered. For the purposes of this study, Walker applied an optimum utilization factor of 85% to all on-street parking facilities, a 95% factor to public lots and a 100% factor to private lots and driveways. This reduced the raw supply inventory of 1,037 spaces to an effective parking supply of 1,012 spaces.

The Main Street Reconstruction Project will reduce the total number of curbside spaces in the study area from 78 spaces to 68 spaces. However, expansion of the Water Street lot will add 7 new spaces to the public parking supply. In addition, the Cecil Group has indicated in design drawings that the Mills Redevelopment will include 44 spaces on site to support some residential parking. The projected total effective parking supply at the conclusion of these projects is then 1,054.

Walker performed occupancy counts of the study area on Thursday, June 29, 2006 between 8 AM and 8 PM. The peak hour observed on the survey day occurred at 7 PM, with a total of 454 cars inventoried across the study area. This represented a peak hour utilization rate of 39% of the total parking supply.

Walker's projection for peak hour demand was for 817 cars parked on a February Saturday night under current conditions, indicating the current supply carries a 195-spaces surplus even under peak annual conditions.

## EXECUTIVE SUMMARY

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The Mill Redevelopment may feature 14 artist live/work loft units, 58 market rate condominium units, roughly 4,700 square feet of office space and 10,200 square feet of restaurant and retail space. Walker estimates the development will require roughly 160 spaces to support use during weekdays and up to 171 spaces on weekends and evenings. Total demand for the area is projected for 987 spaces under peak hour conditions once the Mill Redevelopment is complete.

The large gravel lot adjacent to the Public Library and across Main Street from the Mills offers adequate unused capacity to absorb the new demand generated by the Mill Redevelopment. If pedestrian connections across Main Street are improved, through traffic calming measures and a dedicated cross-walk with good sightlines, this facility should be of reasonable proximity to adequately serve the proposed development. Improvements to the lot itself, including paving, striping, lighting and landscaping, will also facilitate its use by Mills residents, tenants and customers.

With additional growth, spurred by the Mill project, peak hour demand could increase to 1,064 spaces by 2016. While technically this would overwhelm the projected parking supply of 1,054 spaces, it is unlikely this would occur in reality as parkers would simply seek other options to store their vehicles just outside the study area.

Parking supply at the southern end of the study area is inadequate to support current and future demand. Substantial shortfalls exist between individual blocks and between private and public users and supply. However, much of this may be mitigated through small physical expansions of the public parking supply, negotiation of share use agreements between private owners and the Town and improved wayfinding assisting drivers to identify other parking in the area.

The Ledge's site offers the best strategic option for increasing the public parking supply in the Town's core and should be acquired if possible. Shared use agreements with private lot owners should be pursued to make more spaces available at peak times and a parking education program should be instituted to educate business owners on how to make better use of their private facilities. Finally, enforcement must be increased to promote turnover in curbside spaces. This could be paired with the installation of multi-space meters in the future to facilitate turnover.

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Walker Parking Consultants was retained by the Town of Newmarket to perform a needs assessment of the Central Business District (CBD). Walker's initial charge was to develop a supply/demand analysis of the CBD to determine current and future parking needs.

### BACKGROUND

The Town of Newmarket is a bedroom community to both Portsmouth and Durham. The town has already seen significant redevelopment efforts as many of the old textile mills along the Lamprey River have been redeveloped into condominiums. Newmarket currently supports a significant number of apartment building and multi-unit residential structures, many of the rented to students from nearby University of New Hampshire.

The principle driver for this study is the reconstruction of Main Street between Gerry Avenue and Elm Street to accommodate certain utility improvements as well as widening the sidewalks. Prior parking studies have been undertaken in downtown Newmarket, including a 1995 study performed by the University of New Hampshire, a 2004 Garage Feasibility Study by Harvey Construction and a 2005 study undertaken by a volunteer board from the Town.

In addition to the Main Street Reconstruction project, the Newmarket Community Development Corporation (NCDC) will be issuing an RFP shortly for developers to undertake conversion of a 200,000 square foot mill building into a mixed-use development. There are concerns that this redevelopment will trigger an imbalance in parking supply and demand within the CBD. Finally, as Newmarket continues to reinvent itself, there are concerns that other development may follow, further exacerbating parking shortfalls.

### OBJECTIVES

In the following report, Walker will:

- Quantify current and future parking demand;
- Project parking demand and adequacy under current conditions;

## INTRODUCTION

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- Project parking demand and adequacy factoring in the impacts of the road reconstruction, the mill conversion and other emerging developments;
- Quantify and qualify any current or future shortfalls;
- Identify options for increasing the available parking supply;
- Identify options for improving parking management;
- Benchmark the current system against peer municipalities.

### SCOPE OF SERVICES

1. Meet with Town officials to review existing information, request additional data needed, establish lines of communication, and review the project schedule.
2. Obtain and review pertinent reports, studies and statistical data regarding the study area. The may include, but is not limited to:
  - a. Land Use Data – This may include tax cards from the Assessor’s office, real estate reports for local firms detailing current vacancy and absorption rates, and/or listings of currently available properties.
  - b. Emerging Developments Information – This may include the Town Planning Board’s Master Plan, the RFP to develop the Essex Mills Building, the Tax Incremental Finance plan, or other documents as identified by the client and Walker.
  - c. Mass Transit Information – This may include route, schedule and ridership information for all transit systems operating in the study area.
  - d. Geotechnical Data – This may include aerial photographs or maps of the study area, geotechnical reports on underlying strata or other engineering documents referencing conditions of the land beneath the study area.
  - e. Town Ordinances and Regulations – as they regard to parking.
  - f. Phase II Main Street Reconstruction project documents.



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3. Identify major stakeholders in the community and conduct interviews with concerned parties as identified by the Town. We have estimated up to eight (8) meetings for this purpose. To keep costs at a minimum, these meetings will be scheduled on two consecutive days.
4. Inventory the on- and off-street parking facilities within the study area. Record the type of parking (e.g. public, commercial or private), facility (i.e. curbside, lot or structure), pertinent user restrictions and applicable time limitations. Prepare data in tabular and graphic formats and summarize in a technical memorandum (i.e. letter report) to the Town.
5. Perform hourly occupancy counts and license plate inventories across the study area on a typical weekday between 8 AM and 8 PM. Summarize occupancy, length of stay and turnover data in tabular and graphic formats and incorporate into the technical memorandum (i.e. letter report) to the Town.
6. Using land use and other pertinent local data and industry standard methodologies, develop a parking demand model reflecting variations in use according to time of day and year. This model will simulate parking demand accumulations for a representative typically busy weekday and weekend day for each month of the year between 6 AM and 12 AM. The model will be calibrated against actual observed occupancy to reflect local conditions.
7. Using the model, identify 85<sup>th</sup> percentile conditions during the course of a year and isolate this benchmark as "design day" conditions for evaluating current and future parking adequacy.
8. Evaluate parking adequacy for the current year under design day conditions for the study area on a block-by-block and area-wide basis. Identify, quantify and qualify parking shortages in tabular and graphic formats.
9. Determine the future parking demand under two scenarios prepared in collaboration with the Town. These scenarios are:

## PHASE II MAIN STREET PARKING STUDY

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- a. All development anticipated between the current year and 2011 (i.e. 5-year planning horizon).
  - b. All development that may occur between 2011 and 2016 (i.e. 10-year planning horizon).
10. Revise current parking supply to reflect projected impact as each planning horizon and project parking adequacy on a block-by-block and area-wide basis. Identify, quantify and qualify parking shortages in tabular and graphic formats.
11. Prepare a draft report detailing methodology, observations and projections.
12. Prepare conceptual design drawings of the lot adjacent to the Library, incorporating Town design standards for parking facilities and best practices as outlined in the Supply/Demand Analysis. Include with the design drawings a cost estimate to develop the site reflecting the conceptual layout and total space count for the site.
13. Prepare a conceptual drawing of a lot to be located at the current site of the "Ledges" apartment building, assuming removal of the structure and maximization of the site. Include with the design drawings a cost estimate to develop the site reflecting the conceptual layout and total space count for the site. Include in the cost estimate an estimate of costs to acquire the structure (i.e. land acquisition) and prepare the site (i.e. demolition or relocation of the existing structure.)
14. Prepare a conceptual drawing of a lot to be located at the current site of the U.S. Post Office, assuming removal of the structure and maximization of the site. Include with the design drawings a cost estimate to develop the site reflecting the conceptual layout and total space count for the site. Include in the cost estimate an estimate of costs to acquire the structure (i.e. land acquisition) and prepare the site (i.e. demolition or relocation of the existing structure.)
15. Prepare a conceptual drawing of a structure to be located on the Ledges and Post Office site [if both sites were acquired], assuming removal of the structures and maximization of the site. Include with the design drawings a cost estimate to develop the site reflecting the conceptual

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layout and total space count for the site. Include in the cost estimate an estimate of costs to acquire the structure (i.e. land acquisition) and prepare the site (i.e. demolition or relocation of the existing structure.)

16. Prepare a conceptual drawing of a structure to be located on the current site of the Rivermoor Landing Garage, assuming removal of the structure and maximization of the site. Include with the design drawings a cost estimate to develop the site reflecting the conceptual layout and total space count for the site. Include in the cost estimate an estimate of costs to acquire the structure (i.e. land acquisition) and prepare the site (i.e. demolition of the existing structure). Include in the review, a discussion of why replacing the existing structure might have merit for the owner(s) and the benefits/liabilities of public private ventures to develop parking facilities.
17. Review Underwood Engineering's design drawings for the finished project and current signage along Main Street and abutting roadways. Make recommendations for improving wayfinding signage for pedestrians and motorists seeking parking within the CBD.
18. Review the location and utilization rates of private parking lots within the study area during weekdays and evenings. Identify private facilities which may serve to mitigate projected parking deficits and estimate available capacity at the peak weekday and evening hours. Discuss cost/benefits for each site if available capacity could be "shared" between private and public users. Prepare a sample shared use agreement between the Town and a private entity outlining terms, liabilities and benefits of entering into such an agreement.
19. Review the location and utilization rates of private parking lots up to one (1) block outside the study area during weekdays and evenings. Identify private facilities which may serve to mitigate projected parking deficits and estimate available capacity at the peak weekday and evening hours. Discuss cost/benefits for each site if available capacity could be "shared" between private and public users. Prepare a sample shared use agreement

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between the Town and a private entity outlining terms, liabilities and benefits of entering into such an agreement.

20. Review pedestrian's paths between candidate facilities for shared use and popular destinations and make signage recommendations for:

- a. Identifying the lots as available for public use and under what terms;
- b. Directing pedestrians from the lots to common destinations in the CBD and back.

Provide a map detailing sign placement, graphics showing sign text and estimate of cost to produce signs.

21. Review current ordinances for parking in the CBD and make recommendations for revising ordinances to improve parking operations, based on municipal best practices.

22. Review current enforcement efforts in the CBD and make recommendations for improving enforcement, as appropriate. Provide an estimate of cost for any recommendations.

23. Review on-street parking conditions in the CBD for up to five (5) peer communities, to be determined with Town administrators. Note and comment (including photographic examples) on signage, metering (if applicable), meter rates and fine schedules for each peer community. Compare/contrast against current conditions in Newmarket and make recommendations (as appropriate) for improvement. Any changes requiring acquisition or installation of new equipment will be accompanied with an estimate of cost.

24. Prepare a draft report detailing findings and recommendations for client review.

25. Present findings before Town Council. Incorporate comments for revision/correction.

26. Issue a final report.

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### STUDY AREA

Walker's analysis was limited to the area bordered roughly by:

- Elm Street to the north;
- Gerry Avenue to the south;
- The Lamprey River to the east; and –
- Spring Street to the west

Figure 1: Defined Study Area



### DEFINITION OF TERMS

The following definitions are provided to clarify the terms used in this document.

- *Inventory* - This is the total number of spaces counted during survey day observations within the study area.

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- *Public* - Any facility owned and operated by a municipal body and open for use by the general public.
- *Private* - Any facility owned or operated by a private entity or dedicated for use by a select group.
- *Effective Supply* - This the inventory adjusted by the *optimum utilization factor*.
- *Optimum Utilization Factor* - The occupancy rate at which a parking facility operates at peak efficiency. This factor allows patrons to spend less time looking for last available spaces and allows for the dynamics of vehicles moving in and out of spaces. It also allows for spaces lost to poor or improper parking, snow removal, repair, derelict vehicles, and the like.
- *Occupancy* - The number of vehicles observed parked on a survey day.
- *Demand* - The number of spaces required to satisfy visitor, employee and resident needs on a given day. Demand is calculated by applying a parking demand model, designed by Walker in conjunction with other agencies, to project demand based on existing and future land use with the study area.
- *Demand Generator*: Any building, structure, business, or event that brings individuals into the study area.
- *Utilization* - The percent of the total available supply used at a given moment.
- *Adequacy* - The difference between effective parking supply and demand.



## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



## SUPPLY/DEMAND ANALYSIS

Walker performed a parking supply inventory in June 2006 to determine total parking supply within the study area and specific distributions of supply by type of ownership and facility. First, Walker organized the study area into nine parcels of roughly one block each as shown in Figure 2.

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Then, Walker personnel walked the length and breadth of the study area, inventorying block-by-block the number of available spaces according to facility.

Hourly occupancy counts were conducted across the area on June 29<sup>th</sup>, 2006 between 8 AM and 8 PM. Occupancy is the number of parked vehicles counted within the study area on survey day. The survey day occupancy does not represent the peak demand that will be experienced by an area in the course of one-year, but does represent typical parking conditions. A Thursday was chosen as the survey day. Walker traditionally performs occupancy inventories mid-week, as fewer individuals are likely to be absent beginning or finishing a long weekend.

### PARKING SUPPLY

Walker inventoried 1,037 total spaces within the study area.

**Table 1: Current Supply Inventory**

BLOCK #	ON-STREET	PUBLIC <sup>1</sup>	PRIVATE <sup>2</sup>	TOTAL
1	7	241	117	365
2	12	0	121	133
3	6	0	35	41
4	31	0	146	177
5	9	11	39	59
6	9	0	76	85
7	0	0	77	77
8	0	0	38	38
9	4	0	58	62
<b>TOTAL</b>	<b>78</b>	<b>252</b>	<b>707</b>	<b>1,037</b>

**Notes:**

1. Block #1 count includes Elm St. Lot, Library Parking, & gravel lot on site of old Quonset Hut

2. Private parking is predominately residential lots serving multi-unit buildings.

The Town of Newmarket and other public agencies provide a total of 330 spaces within the study area, roughly 32% of the total supply. The large gravel lot near the library accounts for the greatest share of total public supply, while surrounding surface lots with restrictions for use (by time of day or permit only) provide the



## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



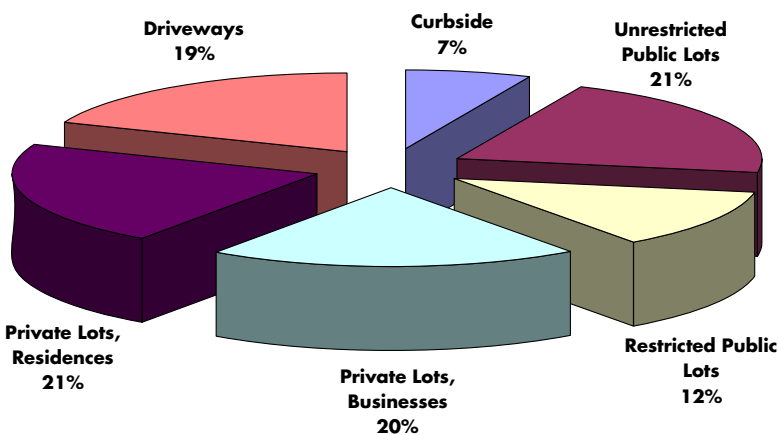
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greatest supply. Curbside parking, limited to two-hours or less, represents the smallest portion of the public supply.

The other 707 spaces are owned privately. Use of these facilities is fairly evenly distributed between lots owned by businesses for employee and customer parking, lots serving multiple unit residences and residential driveways and garages. Distribution of the supply by owner and use is illustrated in Figure 3.

Figure 3: Distribution of Supply



### EFFECTIVE PARKING SUPPLY

Often a facility will be perceived as full by potential patrons, even when there are still a small number spaces available. Additionally, once a facility reaches a certain occupancy level, relative to total capacity, the facility is operating at peak efficiency. While there may still be a handful of available spaces to be had, the effort to locate them negates their usefulness to the average patron. Users may experience frustration and delays as they have to search for the last few vacant spaces or wait for other vehicles to exit the facility. Some patrons may avoid parking altogether, taking their business elsewhere.

To protect against this, Walker applies an *optimum utilization factor* adjustment to the base parking supply inventory. The optimum utilization factor engineers a “cushion” against the perception of inadequate parking, assuring both the perception and reality of available spaces. The optimum utilization factor is also applied as a “cushion” against patrons whom mispark, small

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repairs on facilities or city streets, derelict vehicles, and snow piles during the winter months.

Optimum utilization factors are adjusted by the type of patron and type of facility. For on-street parking, a factor of 85% is employed because of the relative difficulty of finding an open space during peak times. Public surface lots may require a factor of 90-95% depending on the type of patron. Employees and residents who tend to park in the same place every day may necessitate a factor of 95-100%.

When the optimum utilization factor is applied to the inventory, the *effective parking supply* is rendered. For the purposes of this study, Walker did applied an optimum utilization factor of 85% to all on-street parking facilities, a 95% factor to public lots and a 100% factor to private lots and driveways. This reduced the raw supply inventory of 1,037 spaces to an effective parking supply of 1,012 spaces.

**Table 2: Effective Parking Supply**

BLOCK #	ON-STREET <sup>1</sup>	PUBLIC <sup>2</sup>	PRIVATE <sup>3</sup>	TOTAL
1	6	229	117	352
2	10	0	121	131
3	5	0	35	40
4	26	0	146	172
5	8	10	39	57
6	8	0	76	84
7	0	0	77	77
8	0	0	38	38
9	3	0	58	61
<b>TOTAL</b>	<b>66</b>	<b>239</b>	<b>707</b>	<b>1,012</b>

**Notes:**

1. Curbside inventory adjusted by 15% due to difficulty in drive and searching for parking.
2. Public inventory adjusted by 5% due inefficiencies in gravel lots and unfamiliarity factors.
3. Private parking carried as full capacity as the majority is used by residents.

## OCCUPANCY

Walker performed occupancy counts of the study area on Thursday, June 29, 2006 between 8 AM and 8 PM. The peak hour

## PHASE II MAIN STREET PARKING STUDY

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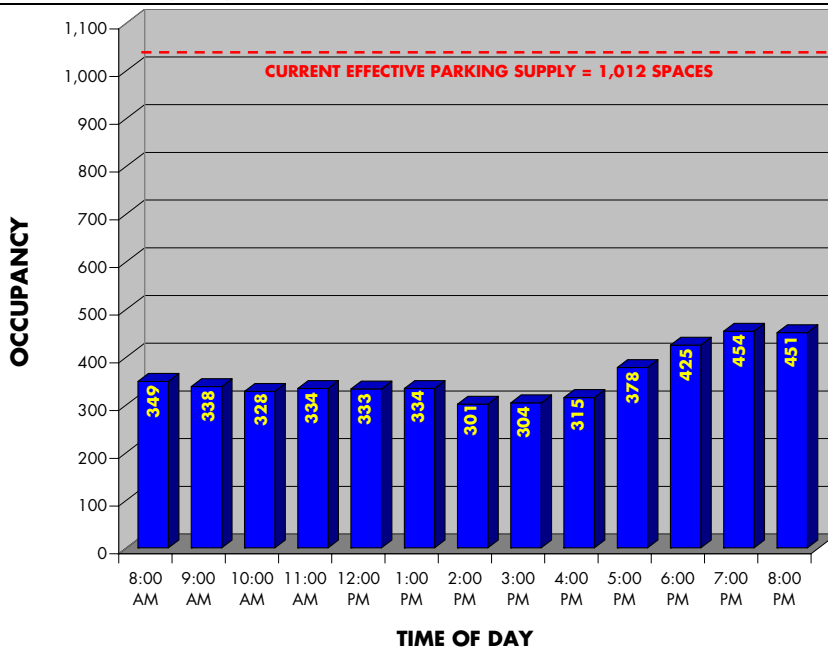


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observed on the survey day occurred at 7 PM, with a total of 454 cars inventoried across the study area. This represented a peak hour utilization rate of 39% of the total parking supply.

Figure 4: Survey Day Occupancy



### UTILIZATION

Utilization is the measure of the total capacity of the supply inventory occupied at a given moment. Utilization is not a measure of adequacy, but it can indicate current or future supply shortages under peak conditions.

June is typically a "slow" month in municipal CBDs similar to Newmarket. Owned residential occupancy can drop as much as 20% during the month as residents are absent on holiday. In communities bordering major colleges and universities, rental residential occupancy can decline as much as 80% during the summer term. Office occupancy can decline as much as 15% in June and as high as 25% in July and August, due to summer vacations.

Because residential uses make up such a large component of the land uses in the study area and area offices feed so much of the weekday trade, a reduction in the number of residents and office workers can translate into a near proportionate reduction in

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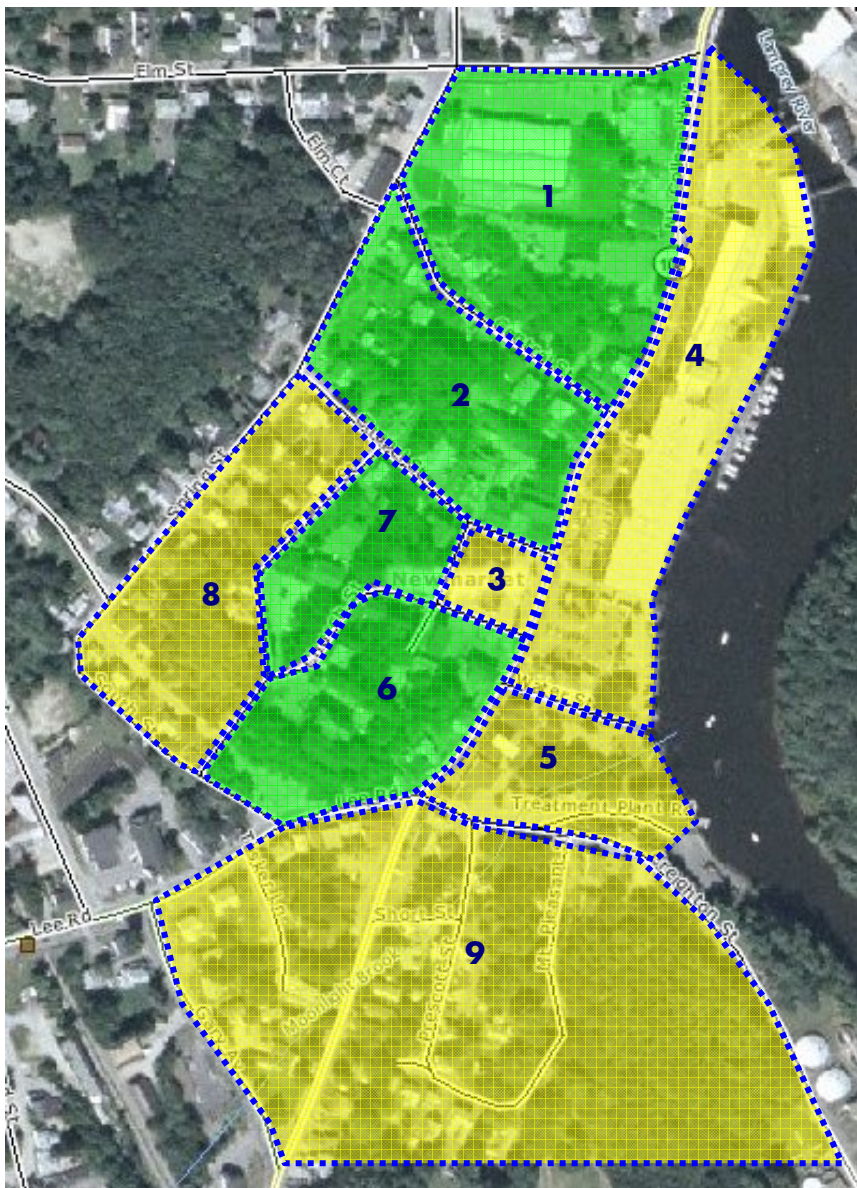


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parking occupancy. The majority of retail stores and restaurants in downtown Newmarket exist to serve area residents and employees, so there are few other demand generators in the CBD to compensate for the reduction in day-to-day demand. As a result, utilization rates recorded on the survey day were not considered typical. None of blocks within the study area exceeded 75% of capacity during the course of the day.

Figure 5: Block Utilization – Survey Day



#### LEGEND:



= Less than 50% utilized



= 51% to 73% utilized

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS

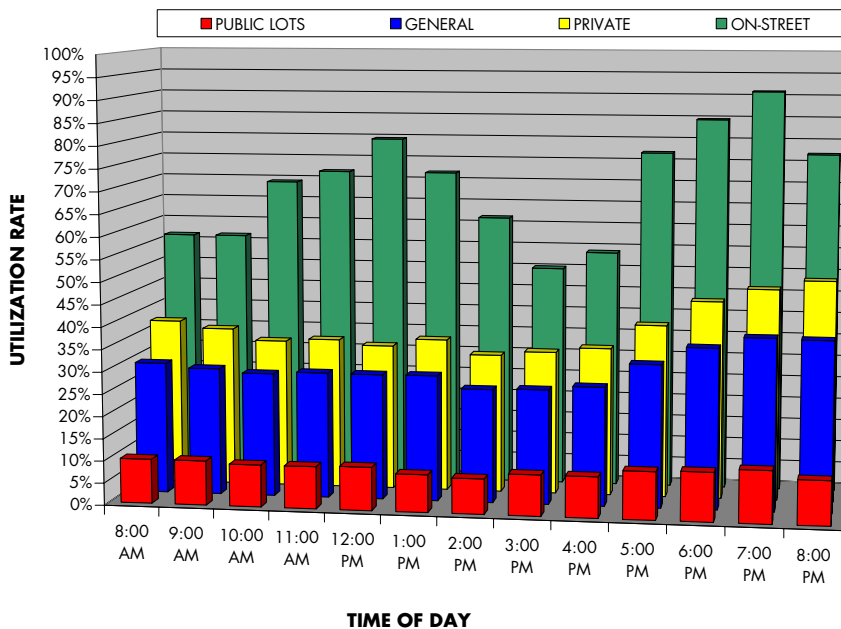


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On-street spaces had the highest utilization overall. This is typical for a CBD as these spots offer the best proximity to most destinations. Utilization of private parking facilities was significantly higher than utilization of public facilities for two reasons. First, private facilities included lots reserved for customers and employees of some business, which experience a higher utilization during the day while residents are away at work. Second, the majority of the public (off-street) facilities were located away from major demand generators in the core of downtown, where as private (off-street) facilities served a wider range of large and small demand generators. Utilization trends are shown in Figure 6.

Figure 6: Survey Day Utilization



## PROJECTED DEMAND

Walker projects that the land uses present within the study area currently exert a peak hour demand for 817 spaces under design day conditions.

## METHODOLOGY

To assess parking adequacy, Walker first had to project demand under "design day" conditions. The design day is defined as representing the conditions equal to the 85<sup>th</sup> percentile of peak annual activity within an area, as endorsed by the National



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Parking Association. Where a year's worth of data is present regarding local parking utilization, survey day occupancy can be adjusted to reflect design day conditions. If such data is not available, a demand model must be developed to simulate demand characteristics of an area under design day conditions.

Walker developed a demand model specifically for this engagement from base demand ratios used in the parking, planning, transportation and real estate industries. The base demand ratios were based on longitudinal studies of various land uses performed by the Institute of Transportation Engineers, the Urban Land Institute, the International Council of Shopping Centers and Walker Parking Consultants. The basic demand ratios can be examined in Table 3.

Table 3: Base Demand Ratios

Land Use	User Group	Weekday	Saturday	Unit	Primary Source
Retail	Customers	4.90	4.00	/1000 sf	ULI Shopping Ctr
	Employees	1.20	1.00	/1000 sf	
Social Club	Customers	7.25	8.50	/1000 sf	ITE Parking Generation
	Employees	0.75	0.90	/1000 sf	
Bar/Restaurant	Customers	15.25	17.00	/1000 sf	ULI Shared Parking & Walker Database
	Employees	2.75	3.00	/1000 sf	
Casual Restaurant	Customers	9.00	12.75	/1000 sf	ITE Parking Generation
	Employees	1.50	2.25	/1000 sf	
Library	Customers	3.20	2.60	/1000 sf	Walker Database
	Employees	0.80	0.50	/1000 sf	
Residential	Apartments	1.00	1.00	/unit	ULI Shared Pkg.
	Condo/Home	2.00	2.00	/unit	
Bank	Visitors	3.00	3.00	/1000 sf	ITE Parking Generation
	Employees	1.60	1.60	/1000 sf	
Medical Office	Visitors	3.00	3.00	/1000 sf	ITE Parking Generation
	Employees	1.50	1.50	/1000 sf	
Service Station	Visitors	11.50	11.50	/1000 sf	Walker Database
	Employees	1.75	1.50	/1000 sf	
General Office	Visitors	0.30	0.03	/1000 sf	ULI Shared Pkg.
	Employees	3.50	0.35	/1000 sf	
Post Office	Visitors	1.75	0.75	/1000 sf	Walker Database
	Employees	5.00	2.00	/1000 sf	

#### REFERENCES:

ULI-the Urban Land Institute, "Shared Parking". Washington, DC . ULI-the Urban Land Institute, 2004.  
Institute of Transportation Engineers, "Parking Generation". Washington, DC.. ITE, 2005.  
ICSC - International Council of Shopping Centers, "Parking Regulations for Shopping Centers"., 1999

Adjustments were then applied to these base ratios to reflect field observations, user characteristics and project specific variations from typical municipal parking demand trends. Adjusted parking generation ratios for each land use were determined by multiplying Walker's basic parking demand ratios by the non-captive ratio (one minus the percent captive), a modal split ratio (one minus the percent driving their car and parking it in the study area) and local adjustment factors.

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Overall, the effects of the non-captive ratio can be very significant. Nationally, 70% of restaurant customers in major urban centers have been determined to be CBD employees, while 50% of the retail patrons are captive. These patrons may park at their place of work or residence within the study area, but patronize other land uses such as a restaurant, bank or retail on foot. The use of the non-captive ratio ensures that captive patrons are not counted twice in the overall parking demand estimate for the CBD core area. For this project, non-captive ratios for each land use were based on Walker's observations during survey periods and interviews with retail, bank, post office and restaurant workers.

While Newmarket is served by COAST Transit, Lamprey Healthcare Elder Transport and the Wildcat Shuttle, most parkers still arrive and depart from the study area by personal vehicle. As a result, only about 5% the total demand could be reduced for any one land use by modal split as it applied to commuters entering the study area via mass transit, on foot, by bicycle or via rideshare.

Local adjustment factors are variations in demand specific to the project. A local adjustment factor is the ratio of observed overall parking occupancy to the calculated parking demand after all other adjustments are applied. Local adjustment factors may be influenced by: vacancy rates for particular land uses, local variations in density of use from national standards and other environmental factors specific to the study area or locality. The factors applied and resulting project specific demand ratios are shown in Table 4.

Table 4: Ratio Adjustments

		Weekday					Saturday						
Land Use	User Group	Base Ratio	Local Adj	Non-Captive Ratio	Modal Split Adj	Project Ratio	Unit	Base Ratio	Local Adj	Non-Captive Ratio	Modal Split Adj	Project Ratio	Unit
Retail	Customers	4.90	0.5	0.8	0.95	1.86	/1000 sf	4.00	0.5	1	0.95	1.90	/1000 sf
	Employees	1.20	0.5	1	0.95	0.57	/1000 sf	1.00	0.5	1	0.95	0.48	/1000 sf
Social Club	Customers	7.25	1	1	0.95	6.89	/1000 sf	8.50	1	1	0.95	8.08	/1000 sf
	Employees	0.75	1	1	0.95	0.71	/1000 sf	0.90	1	1	0.95	0.86	/1000 sf
Bar/Restaurant	Customers	15.25	0.51	0.9	0.95	6.65	/1000 sf	17.00	0.51	1	0.95	8.24	/1000 sf
	Employees	2.75	0.51	1	0.95	1.33	/1000 sf	3.00	0.51	1	0.95	1.45	/1000 sf
Casual Restaurant	Customers	9.00	0.5	0.85	0.95	3.63	/1000 sf	12.75	0.5	1	0.95	6.06	/1000 sf
	Employees	1.50	0.5	1	0.95	0.71	/1000 sf	2.25	0.5	1	0.95	1.07	/1000 sf
Library	Customers	3.20	0.5	1	0.95	1.52	/1000 sf	2.60	0.5	1	0.95	1.24	/1000 sf
	Employees	0.80	0.5	1	0.95	0.38	/1000 sf	0.50	0.5	1	0.95	0.24	/1000 sf
Residential	Apartments	1.00	0.85	1	0.95	0.81	/unit	1.00	0.85	1	0.95	0.81	/unit
	Condo/Home	2.00	0.85	1	0.95	1.62	/unit	2.00	0.85	1	0.95	1.62	/unit
Bank	Visitors	3.00	0.5	0.8	0.95	1.14	/1000 sf	3.00	0.5	1	0.95	1.43	/1000 sf
	Employees	1.60	0.5	1	0.95	0.76	/1000 sf	1.60	0.5	1	0.95	0.76	/1000 sf
Medical Office	Visitors	3.00	0.75	1	0.95	2.14	/1000 sf	3.00	0.75	1	0.95	2.14	/1000 sf
	Employees	1.50	0.75	1	0.95	1.07	/1000 sf	1.50	0.75	1	0.95	1.07	/1000 sf
Service Station	Visitors	11.50	1	1	0.95	10.93	/1000 sf	11.50	1	1	0.95	10.93	/1000 sf
	Employees	1.75	1	1	0.95	1.66	/1000 sf	1.50	1	1	0.95	1.43	/1000 sf
General Office	Visitors	0.30	0.75	1	0.95	0.21	/1000 sf	0.03	0.75	1	0.95	0.02	/1000 sf
	Employees	3.50	0.75	1	0.95	2.49	/1000 sf	0.35	0.75	1	0.95	0.25	/1000 sf
Post Office	Visitors	1.75	0.5	0.8	0.95	0.67	/1000 sf	0.75	0.5	1	0.95	0.36	/1000 sf
	Employees	5.00	0.5	1	0.95	2.38	/1000 sf	2.00	0.5	1	0.95	0.95	/1000 sf

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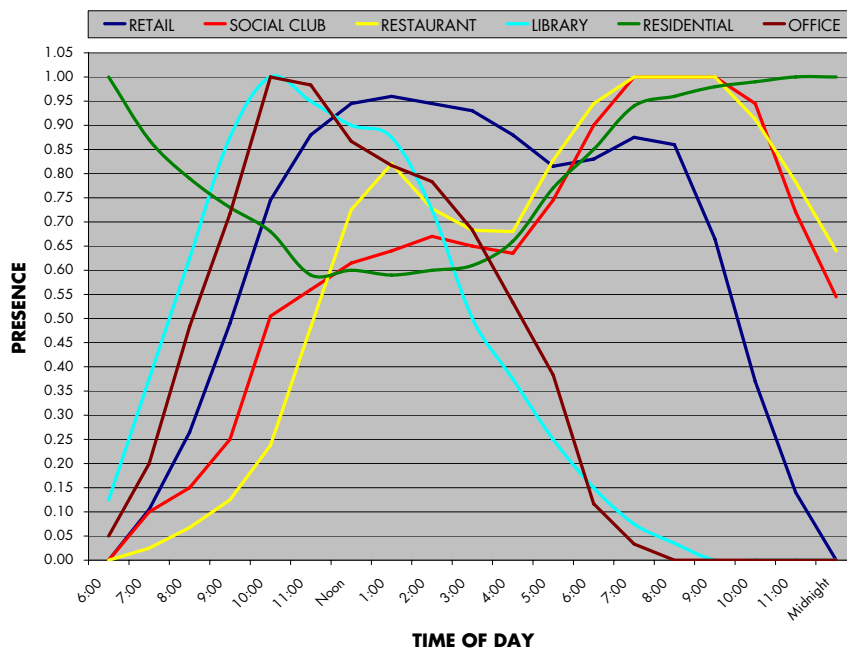
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Once project specific demand ratios were calculated, the model was used to calculate peak demand for each block and the entire study area by entering land use data collected from the [VisionAppraisal.com](http://VisionAppraisal.com).<sup>1</sup> Peak demand was projected for each land use and summed as the peak of all land uses. This sum figure was inflated as it assumed that all land uses would experience peak demand simultaneously. In reality, different land uses experience peak demand at different times.

To reflect 'real life' conditions, Walker took the peak demand projections and applied two adjustments to render a more accurate forecast of peak demand. These adjustments were a time of day adjustment and a month of year adjustment. Adjustments for time of day and month of year are referred to in the parking industry as *presence*.

*Presence* refers to the presence of users at a land use. Adjustments for presence reflect the fact that different land uses accumulate demand at different times of the day or year. For example, office workers are most present at mid-morning and least so a midnight. Weekday presence factors applied to the model for variances in demand by time of day are illustrated in Figure 7.

Figure 7: Weekday Presence Factors



<sup>1</sup> This is the online posting service the Town of Newmarket's Tax Assessor uses to post current property assessments.



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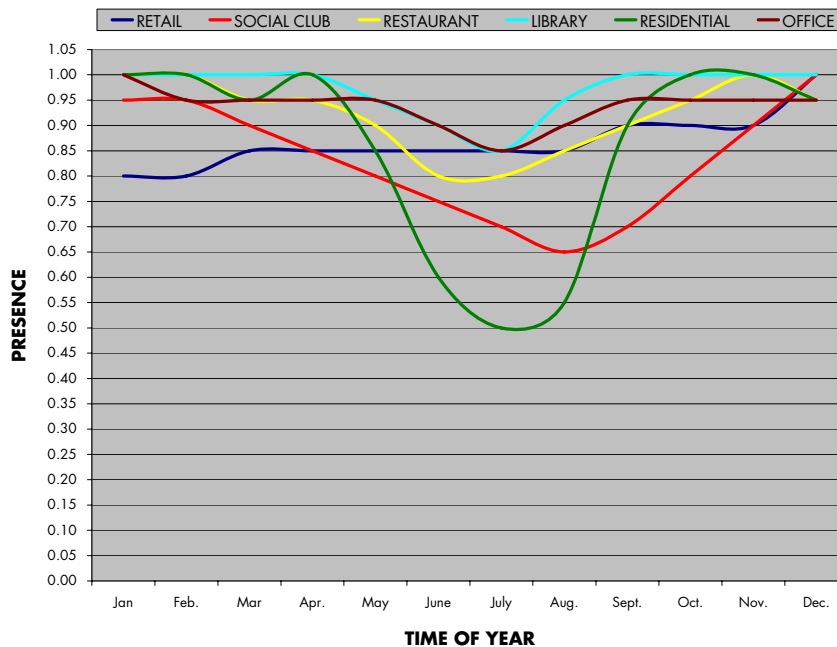


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Presence can also fluctuate according to month of the year. As noted before, differences in presence for an office or apartment building month-to-month will fluctuate according to the school year and vacation schedules, with demand decreasing during the summer months. Presence factors applied to weekday modeling by time of year are illustrated in Figure 8.

Figure 8: Seasonal Presence Factors



With these adjustments in presence made, demand under design day conditions could be projected. Once demand was projected, it could be compared to the existing and future effective parking supply and adequacy could be judged. Parking adequacy is defined as the balance of the effective parking supply as compared to parking demand.

### LAND USE INVENTORY

Walker performed a simple land use inventory as part of general fieldwork, noting the address, apparent use and general dimensions of each building in the study area. Walker then used this basic information and the data shown in assessments at [VisionAppraisal.com](http://VisionAppraisal.com) to develop a land use inventory of the study area. Walker identified twelve different land uses within the study area and over four hundred thousand square feet of programmed

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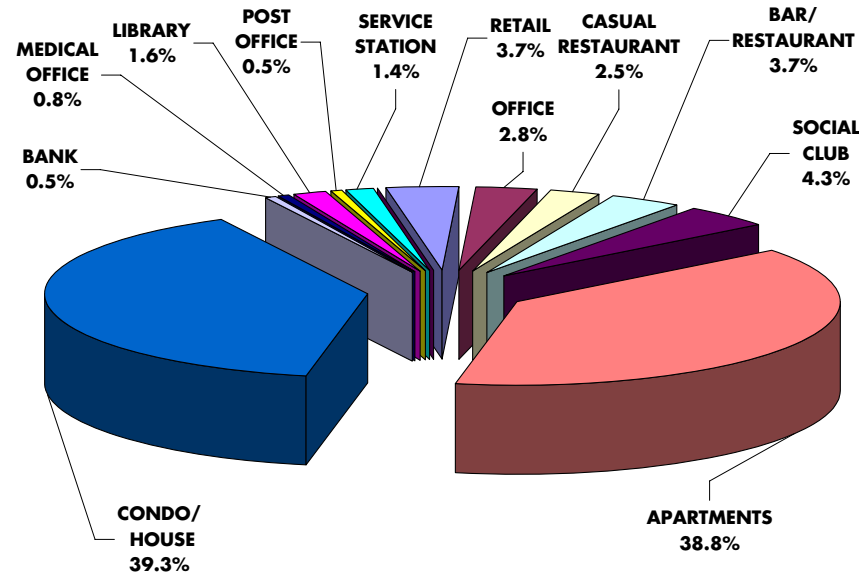


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space. Distribution of different land uses, by gross square footage, is illustrated in Figure 9.

Figure 9: Distribution of Land Uses



### EMERGING DEVELOPMENTS

The only emerging developments identified to Walker were the Main Street project and the Mill Redevelopment. According to the tabulation provided on page 5 of *Final Report for Town Council from the Downtown Parking Evaluation and Site Committee* this project will reduce total curbside parking in the study area from 78 to 68 spaces<sup>2</sup>. The largest loss of spaces will be along the east side of Route 108 between Rivermoor Landing and the Eagles Club, while there will be a moderate gain of spaces along the west side of Main Street opposite the Post Office. To offset this, the lot adjacent to the public landing will be expanded by roughly 7 spaces, resulting in a net loss of 3 spaces.

The Cecil Group provided Walker with based data on a potential program for the Mill Redevelopment. This program presented a total of 86,980 square feet of marketable space, composed of the following land uses:

- 14 Artist Live/Work Condominium units;
- 58 Market Rate Residential Condominium units;

<sup>2</sup> Per Underwood Engineering schematic drawings dated 9/21/06.

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- 4,702 square feet of office space; and
- 10,201 square feet of commercial space.

Walker subdivided this last category evenly between retail shops (3,400 SF), casual restaurant (3,400 SF) and bar/restaurant (3,401 SF). Walker assumed provision of 44 parking spaces on site to support residential uses, per a conversation with the Cecil Group project manager. For this analysis, Walker assumed completion of both projections by 2011.

In lieu of information regarding other new development or redevelopment within the study area, Walker assumed that future growth would most likely come in the form of expansion of existing demand generators or occupation of space currently vacant. Walker applied a conservative set of assumptions to model moderate growth within the study area, based on our understanding of current employment and growth trends. Our assumptions were as follows:

1. Over the next ten years, office space vacancy will decline 1% annually.
2. Over the next ten years, residential space vacancy will decline 1% annually.
3. Over the next ten years, retail sales will increase 1% annually.
4. Over the next ten years, restaurant use will increase 1% annually.

The four assumed factors were the drivers for Walker's future demand growth projections for the 10-year planning horizons (2016).

#### *CURRENT (2006) CONDITIONS*

Peak demand, factoring in variations in demand for time of day and year, for current conditions was projected to be for **817 vehicles**. Peak demand is projected to occur on a Saturday evening in February. Peak demand for a weekday is projected to occur in the evening in February, with 760 vehicles. Demand projections for the busiest weekday and busiest weekend day of the year, as well as summary of peak hour projections for weekdays and weekends, is included as Appendix A.

## PHASE II MAIN STREET PARKING STUDY

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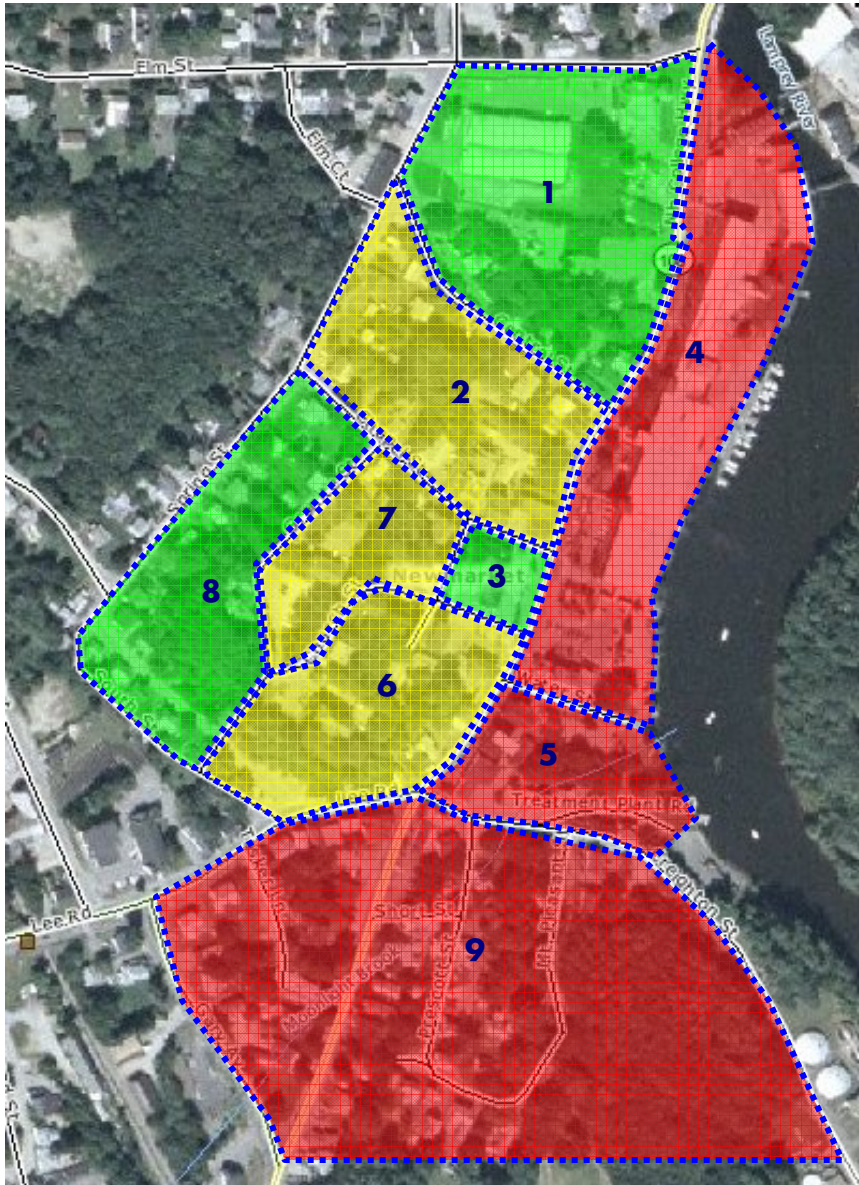


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Projected utilization varies widely, block-to-block. Three blocks exceeded parking supply capacity, while three blocks exerted demand equal to less than 75% of their capacity. Figure 10, illustrates trends across the study area under peak hour conditions.

Figure 10: Block Utilization – Design Day



#### LEGEND

- |   |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
|  | = Utilization of less than 75% |  | = Utilization of 76% - 100% |
|  | = Utilization exceeds capacity |   |                             |



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#### 2011 CONDITIONS

With the completion of the Main Street project and the Mill Redevelopment, peak hour parking demand is projected to equal 987 cars, still occurring on a Saturday night in February. Peak hour demand for a weekday is projected to equal 921 spaces. Demand projections for peak days in 2011 are included in Appendix A, as are peak hour projections by month.

The Mill Redevelopment is projected to need 160 spaces on a weekday evening and 171 spaces on a weekend evening under design day conditions. Of these spaces, roughly 110 will be occupied by residents, 50 by restaurant patrons and employees, and the remainder by office workers, retail employees and shoppers.

Overall utilization at peak will increase to 95% of total area capacity. The utilization picture, block-to-block, will not differ greatly from current projections under design day conditions with one exception. Block 4, shown in Figure 10 on the previous page, already operates at a deficit relative to contained capacity due to the concentration of demand in Rivermoor Landing and the demand the Eagles Club exerts on the block during an event. Rehabilitation of the other mill buildings will only compound this effect.

#### 2016 CONDITIONS

To simulate growth stimulated by the Main Street and Mill Redevelopment projects, Walker assumed the following:

1. A 10% increase in office space absorption by 2016;
2. A 10% increase in residential absorption by 2016;
3. A 10% increase in retail sales by 2016;
4. A 10% increase in restaurant sales by 2016.

Inclusion of these growth assumptions into the demand model rendered a projection for 1,064 vehicles at the peak hour under design day conditions (a February Saturday evening) and 988 vehicles at peak under design day conditions for a weekday evening. The projected capacity for the study area at this time will be 1,078 spaces, rendering an overall utilization rate of 98% at the peak hour. On a block-by-block basis, general utilization did not differ from the 2011 projections. Demand projections for peak



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days in 2016 are included in Appendix A, as are peak hour projections by month.

#### ADEQUACY

Parking adequacy is defined as the balance of the effective parking supply as compared to parking demand. The traditional method of analyzing parking in a downtown mixed-use area is to determine the effective parking supply and peak demand and compare them to determine adequacy. A positive figure indicates there is more supply than demand to the balance; a negative figure indicates more demand than supply.

A very fundamental aspect of any area being studied is the interplay of activities from block-to-block; parking is one of these dynamic factors. It is important not to just focus on the total balance for the study area. A study area can have a positive outcome and still contain parking shortages on individual blocks. These shortages occur when imbalances in the utilization of parking supply exist. Because parking spaces are unutilized does not automatically translate into availability. The available facilities on a given block may be too distant to access from where when parking deficits occur on another block.

By the same token, it is important not to focus on the balance for any individual block. Parking demand is generated only by the users in each building; people do not come to a municipality's CBD merely to park. Not all users bound for a particular block will choose to park there, even if sufficient spaces are available. Market factors, especially price and walking distance, will result in substantial interaction between blocks both within and outside of the study area. The positive/negative figure is merely the net parking balance that block contributes to its influence area (for example, within an acceptable walking distance for most users), and the CBD as a whole. It does not, and should not, represent the number of spaces which should be provided on a specific block, but rather the number of peak hour users generated by the land uses present on one block under peak conditions. For this reason, Walker's final step was to project current demand and evaluate adequacy on a block-by-block basis.

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#### CURRENT ADEQUACY

From a study area wide perspective, the current effective parking supply of 1,012 spaces is adequate to meet the projected peak demand of 817 vehicles with a surplus of 195 spaces.

On a block-for-block basis, deficits were projected for Blocks 4, 5 and 9 under peak hour conditions (Saturday evening in February) as shown in Figure 11.

Figure 11: Projected Current Adequacy



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These totals shown in the figure above represent comparisons of projected peak hour demand to effective parking supply.

As a further distillation of this process, Walker performed two other analyses. At peak hour, Walker divided demand between public users (i.e. diners, shoppers, visitors and others without a designated parking area on each block) and private users (employees, customers and residents with dedicated parking on each block). Walker performed this analysis for the peak hour (9 PM, Saturday in February) and the busiest hour of the busiest workday of the year (1 PM, February weekday).

As Table 5 shows, substantial short-falls are projected for public parking under peak hour conditions.

Table 5: Current Peak Hour Adequacy

BLOCK #	PUBLIC			PRIVATE		
	SUPPLY	DEMAND	ADEQUACY	SUPPLY	DEMAND	ADEQUACY
1	235	34	201	117	87	30
2	10	46	(36)	121	65	56
3	5	0	5	35	10	25
4	26	10	16	146	168	(22)
5	18	2	16	39	93	(54)
6	8	45	(37)	76	24	52
7	0	35	(35)	77	28	49
8	0	0	0	38	21	17
9	3	66	(63)	58	83	(25)

Short-falls for public parking also indicated at the peak hour on weekdays under current design day conditions.

Table 6: Current Peak Hour Adequacy for a Workday

BLOCK #	PUBLIC			PRIVATE		
	SUPPLY	DEMAND	ADEQUACY	SUPPLY	DEMAND	ADEQUACY
1	235	39	196	117	46	71
2	10	31	(21)	121	42	79
3	5	1	4	35	10	25
4	26	4	22	146	113	33
5	18	2	16	39	47	(8)
6	8	30	(22)	76	18	58
7	0	22	(22)	77	18	59
8	0	0	0	38	13	25
9	3	60	(57)	58	61	(3)



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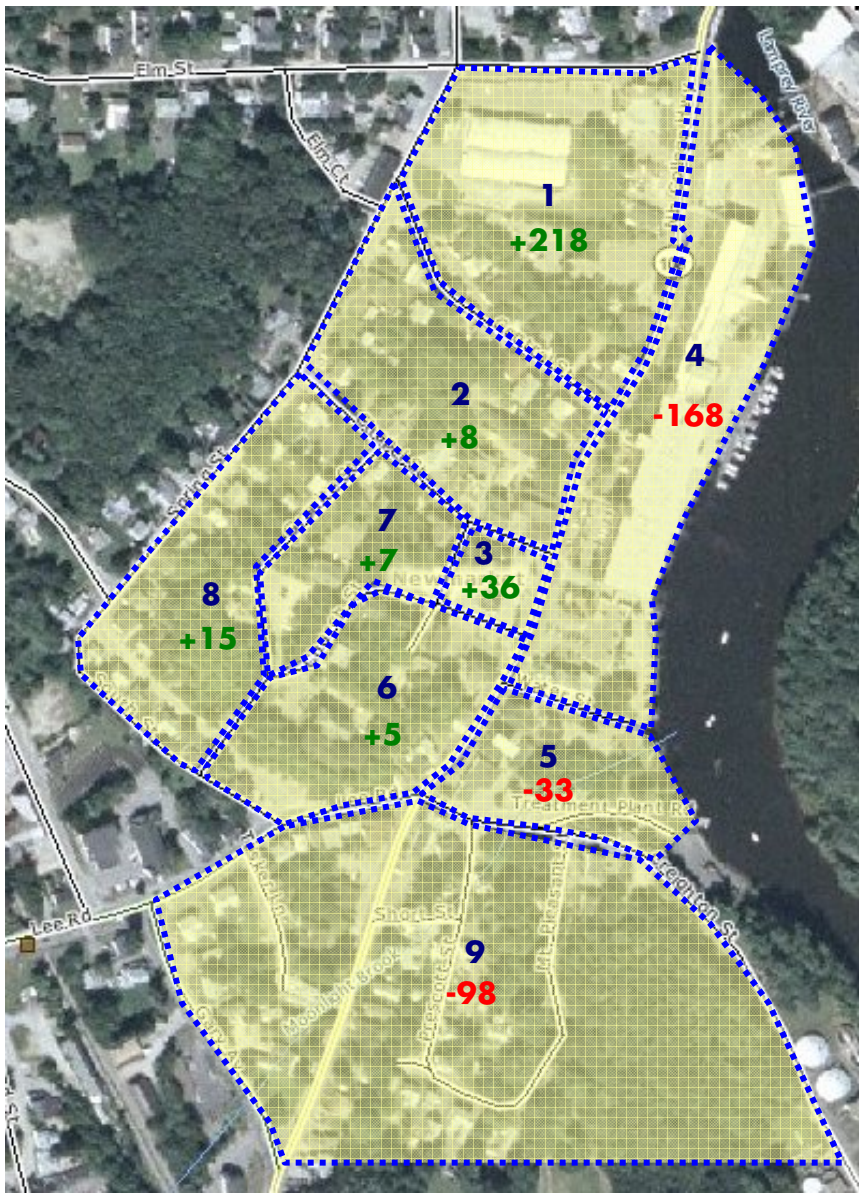
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#### FUTURE ADEQUACY

The current parking supply will be modified by two factors: the Main Street reconstruction and the Mill Redevelopment. The Main Street project will reduce the on-street parking supply by ten spaces, but expansion of the Water Street lot will increase the facility by 7 spaces, netting a three space loss. In addition, the developer has indicated the Mill project will have 44 spaces on site for residential parking. These changes render a future inventory of 1,078 spaces and an effective supply of 1,054 spaces.

Figure 12: Projected 2016 Adequacy



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Overall, the future effective parking supply (1,057 spaces) is projected to be adequate to support peak total demand at 2011 (987 cars), but not 2016 (1,064 cars). Pre-existing shortfalls shown in the preceding tables will be significantly increased by emerging developments as shown in Figure 12, prior page.

By 2016, major shortfalls will exist in and around all but three blocks in the study area at peak.

Table 7: 2016 Peak Hour Adequacy

BLOCK #	PUBLIC			PRIVATE		
	SUPPLY	DEMAND	ADEQUACY	SUPPLY	DEMAND	ADEQUACY
1	232	25	207	117	63	54
2	9	63	(54)	121	75	46
3	11	0	11	35	9	26
4	16	179	(163)	190	234	(44)
5	24	5	19	39	49	(10)
6	8	29	(21)	76	60	16
7	0	40	(40)	77	40	37
8	0	0	0	38	30	8
9	3	40	(37)	58	50	8

Weekday shortfalls will also be an issue on all but three blocks in the study area as shown in Table 8.

Table 8: 2016 Weekday Adequacy

BLOCK #	PUBLIC			PRIVATE		
	SUPPLY	DEMAND	ADEQUACY	SUPPLY	DEMAND	ADEQUACY
1	232	34	198	117	105	12
2	9	56	(47)	121	70	51
3	11	0	11	35	13	22
4	16	166	(150)	190	245	(55)
5	24	3	21	39	101	(62)
6	8	21	(13)	76	64	12
7	0	40	(40)	77	37	40
8	0	0	0	38	31	7
9	3	33	(30)	58	51	7

## CONCLUSIONS

Through the next five years, the current parking supply should be adequate to meet peak hour demand across the area. Even the minor (10 spaces) projected future shortfalls are, at best, technical

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deficits. As with the shortfalls projected for Block 9<sup>3</sup> in the prior analyses, practice in reality differs substantially from theoretical projects.

Parking shortfalls projected for Block 2 may be offset by the substantial surplus of public parking contained in Block 1. Similarly, some of the projected shortfalls on the north end of Block 4 – the site of the Mill Redevelopment – can be accommodated across Main Street in Block 4. However, the grouping of blocks at the middle of the study area (4, 5, 6 and 7) are effectively beyond the reasonable walking distance between the public facilities in Block 1 and the businesses driving these deficits.

Some of the shortfalls may be able to be mitigated by negotiating shared use agreements with the owners of some of the private lots in the area. Others may require additional provision of physical parking spaces, upgrades in wayfinding signage or other operational improvements to correct. Walker will address these options, and how they might be used as solutions, in the next section.

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<sup>3</sup> The shortfalls shown for Block 9 are not actually occurring. While there are very limited number of formal parking spaces within this area, there are a wide variety of informal spaces (in yards, on street shoulders, etc.) that are employed to accommodate these vehicles. In addition, many of the employees and residents park just outside the study area boundary in available lots and drives.

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In agreement with the Planning Department of the Town of Newmarket, the scope of this assignment includes the consideration of five (5) parking improvements.

These include the following conceptual parking improvement designs to be constructed at the following sites:

- Option #1: A surface parking lot to be constructed incorporating the vacant parcel adjacent to the Library and the existing surface lot.
- Option #2: A surface parking lot to be constructed on the current site of the "Ledges" apartment building.
- Option #3: A surface parking lot to be constructed on the current site of the U.S. Post Office.
- Option #4: A parking structure to be constructed on the Ledges and Post Office site, combined.
- Option #5: A parking structure to be located on the current site of the Rivermoor Landing Garage.

Each alternative incorporates Town design standards for parking facilities and best practices as outlined in the Supply/Demand Analysis. Design assumes maximization of each site. Each alternative includes a cost estimate to prepare the site, with demolition or relocation of the existing structure, if applicable. A cost estimate is developed for each design drawing reflecting the conceptual layout and total space count for the site. An estimate of costs to acquire each property (i.e. land acquisition) is estimated from tax records and estimates of the Town Planning Department.

## ALTERNATIVES ANALYSIS

## PHASE II MAIN STREET PARKING STUDY

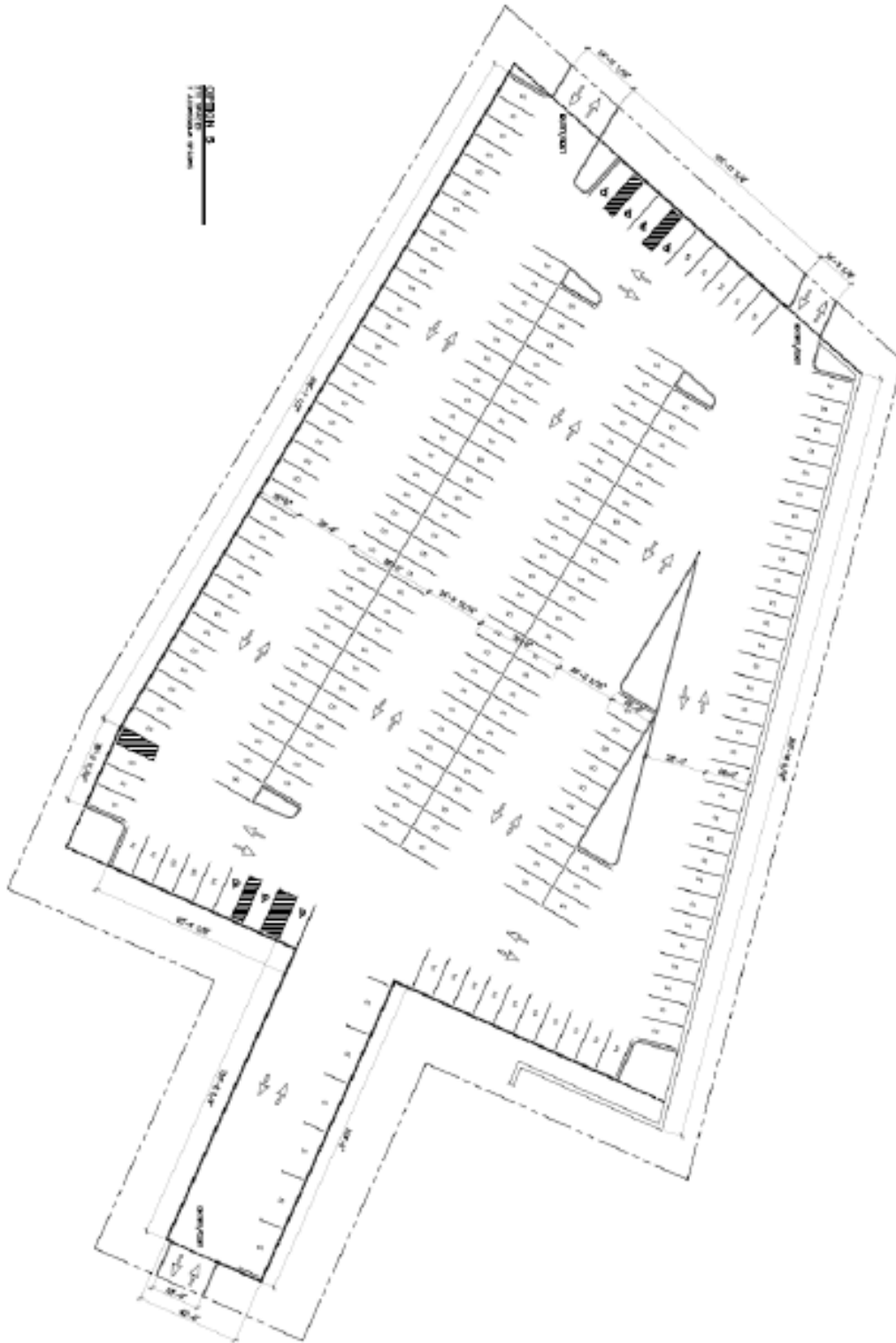
SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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PROJECT # 16-1870.00

Figure 13: Option #1 - Quonset Hut Site Layout



This layout yields 217 parking spaces (210 standard parking spaces plus 7 accessible spaces).

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Table 9: Option #1 Construction Cost Estimate

**CONCEPTUAL COST ESTIMATE FOR  
TOWN OF NEWMARKET  
OPTION #1**

TIER	GRADE AREA (ft <sup>2</sup> )	SUPPORTED AREA (ft <sup>2</sup> )	TOTAL GARAGE AREA (ft <sup>2</sup> )	# OF CAR STALLS
Grade Lot (elev. 0')	78,973		78,973	217
<b>TOTALS</b>	Parking Area 78,973	0		
	Total Area 78,973	0	78,973	217
<b>SQUARE FEET PER CAR STALL = 364</b>				

ITEM	DIV	DESCRIPTION	UNIT	TYPICAL COST/UNIT	QUANTITY	COST <sup>(7,8)</sup>	\$/SF Floor Area
1	2	Site Grading <sup>(1)</sup>	SF of Site	\$2.25	40,693	\$91,600	\$1.16
2	2	Asphalt Removal <sup>(2)</sup>	SF	\$2.00	40,693	\$81,400	\$1.03
3	2	Asphalt Paving and Subbase <sup>(3)</sup>	SF	\$4.00	78,973	\$315,900	\$4.00
4	3	Concrete Curbing	LF	\$10.00	1,450	\$14,500	\$0.18
5	9	Stall Striping with Directional Arrows	Lump Sum	\$3,000.00	1	\$3,000	\$0.04
6	10	Signage	SF	\$0.30	78,973	\$23,700	\$0.30
7	15	Mechanical (Drainage) <sup>(4)</sup>	Lump Sum	\$15,000.00	1	\$15,000	\$0.19
8	16	Electrical (Lighting) <sup>(5)</sup>	Each	\$8,000.00	6	\$48,000	\$0.61
<b>SUBTOTAL</b>						<b>\$593,000</b>	<b>\$7.51</b>
GENERAL CONDITIONS						<b>\$59,300</b>	<b>\$0.75</b>
CONSTRUCTION CONTINGENCY						<b>\$118,600</b>	<b>\$1.50</b>
<b>TOTAL CONSTRUCTION COSTS <sup>(6,7)</sup></b>						<b>\$770,900</b>	<b>\$9.76</b>
<b>CARS = 217</b>						<b>CONST. \$/CAR</b>	<b>\$3,553</b>

**Notes:**

- Costs to grade site after asphalt and building removal. Site is assumed to be level in gravel area. Handling of Hazardous or regulated materials is excluded.
- Cost assumes the removal of up to 6" of gravel subbase or landscape soils. Handling of Hazardous or regulated materials is excluded.
- Cost assumes 6" gravel subbase and upto 4" of asphalt.
- Mechanical costs for storm drainage within the parking areas and assumed length of associated piping.
- Electrical costs for the installation of a site lighting pole with base and associated power wiring.
- Excluding soft costs (i.e. design, surveying, testing, etc.)
- Numbers rounded to the nearest thousand and reflect 2006 dollars.



## PHASE II MAIN STREET PARKING STUDY

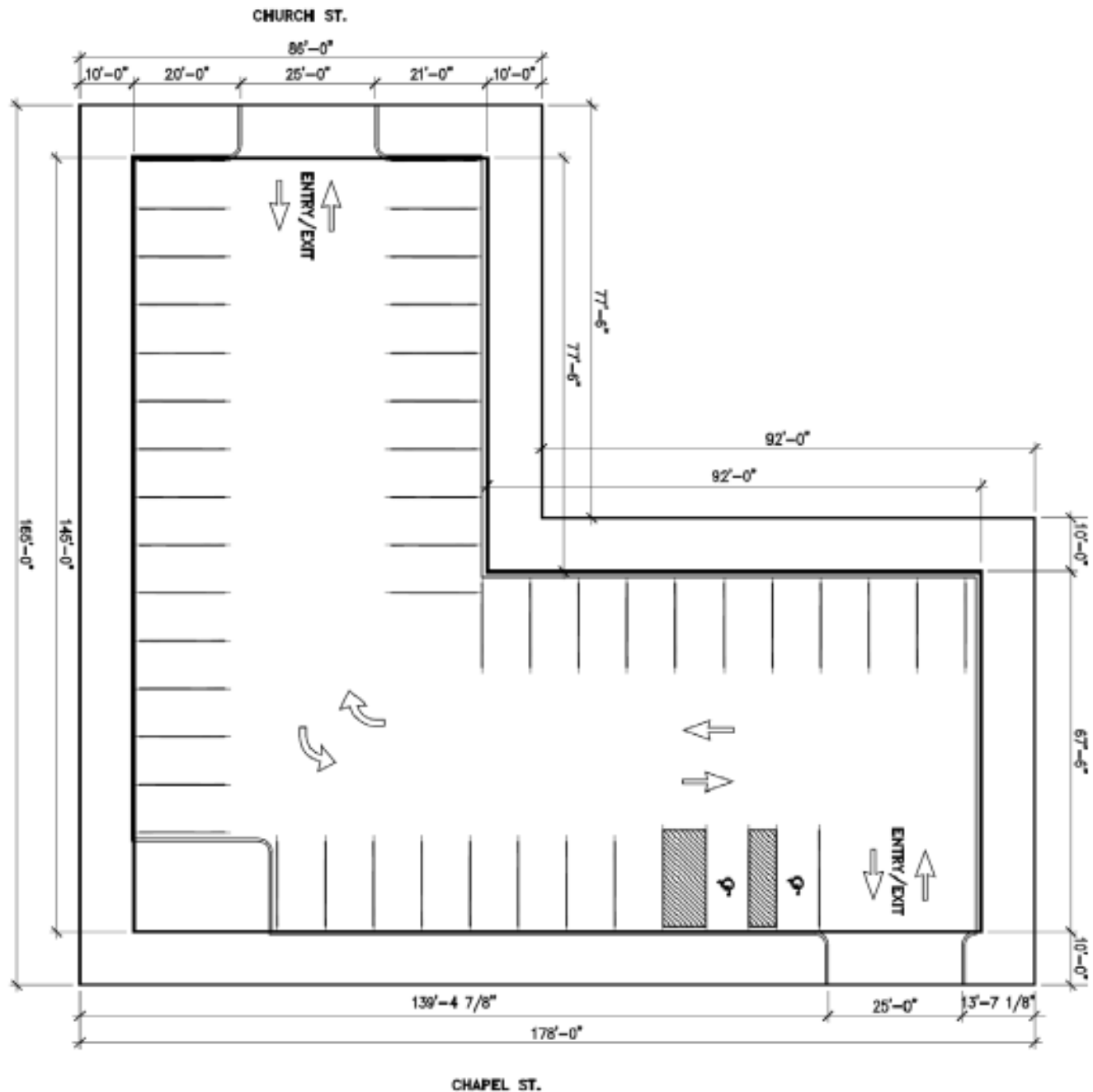
### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Figure 14: Option #2 - "Ledges" Site Layout



This layout yields 43 parking spaces (41 standard parking spaces plus 2 accessible spaces).

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

Table 10: Option #2 Construction Cost Estimate

### CONCEPTUAL COST ESTIMATE FOR TOWN OF NEWMARKET OPTION #2

TIER	GRADE AREA (ft <sup>2</sup> )	SUPPORTED AREA (ft <sup>2</sup> )	TOTAL GARAGE AREA (ft <sup>2</sup> )	# OF CAR STALLS
Grade Lot (elev. 0')	15,092		15,092	43
<b>TOTALS</b>	Parking Area	15,092	0	
	Total Area	15,092	0	43
<b>SQUARE FEET PER CAR STALL = 351</b>				

№	№	DESCRIPTION	UNIT	TYPICAL COST/UNIT	QUANTITY	COST <sup>(7,8)</sup>	\$/SF Floor Area
1	2	Site Grading <sup>(1)</sup>	SF of Site	\$2.25	15,092	<b>\$34,000</b>	\$2.25
2	2	Existing Building Demolition <sup>(2)</sup>	LS	\$30,000.00	1	<b>\$30,000</b>	\$1.99
3	2	Gravel/Lawn Removal <sup>(3)</sup>	SF	\$2.00	15,092	<b>\$30,200</b>	\$2.00
4	2	Asphalt Paving and Subbase <sup>(4)</sup>	SF	\$4.00	15,092	<b>\$60,400</b>	\$4.00
5	3	Concrete Curbing	LF	\$10.00	350	<b>\$3,500</b>	\$0.23
6	9	Stall Striping with Directional Arrows	Lump Sum	\$2,000.00	1	<b>\$2,000</b>	\$0.13
7	10	Signage	SF	\$0.30	15,092	<b>\$4,500</b>	\$0.30
8	15	Mechanical (Drainage) <sup>(5)</sup>	Lump Sum	\$15,000.00	1	<b>\$15,000</b>	\$0.99
9	16	Electrical (Lighting) <sup>(6)</sup>	Each	\$8,000.00	4	<b>\$32,000</b>	\$2.12
<b>SUBTOTAL</b>						<b>\$212,000</b>	\$14.05
GENERAL CONDITIONS							
CONSTRUCTION CONTINGENCY							
<b>TOTAL CONSTRUCTION COSTS <sup>(7,8)</sup></b>						<b>\$275,600</b>	\$18.26
<b>CARS = 43</b>						<b>CONST. \$/CAR</b>	<b>\$6,409</b>

#### Notes:

1. Costs to grade site after asphalt and building removal. Site is assumed to be level on grade areas of both tiers. Handling of Hazardous or regulated materials is excluded.
2. Costs include demolition of the existing Ledges building. Building estimated to be a three level masonry building with a footprint of approximately 1,500 square feet. Handling of hazardous or regulated material is excluded.
3. Cost assumes the removal of upto 6" of gravel subbase or landscape soils. Handling of Hazardous or regulated materials is excluded.
4. Cost assumes 6" gravel subbase and upto 4" of asphalt.
5. Mechanical costs for storm drainage within the parking areas and assumed length of associated piping.
6. Electrical costs for the installation of a site lighting pole with base and associated power wiring.
7. Excluding soft costs (i.e. design, surveying, testing, etc.)
8. Numbers rounded to the nearest thousand and reflect 2006 dollars.



## PHASE II MAIN STREET PARKING STUDY

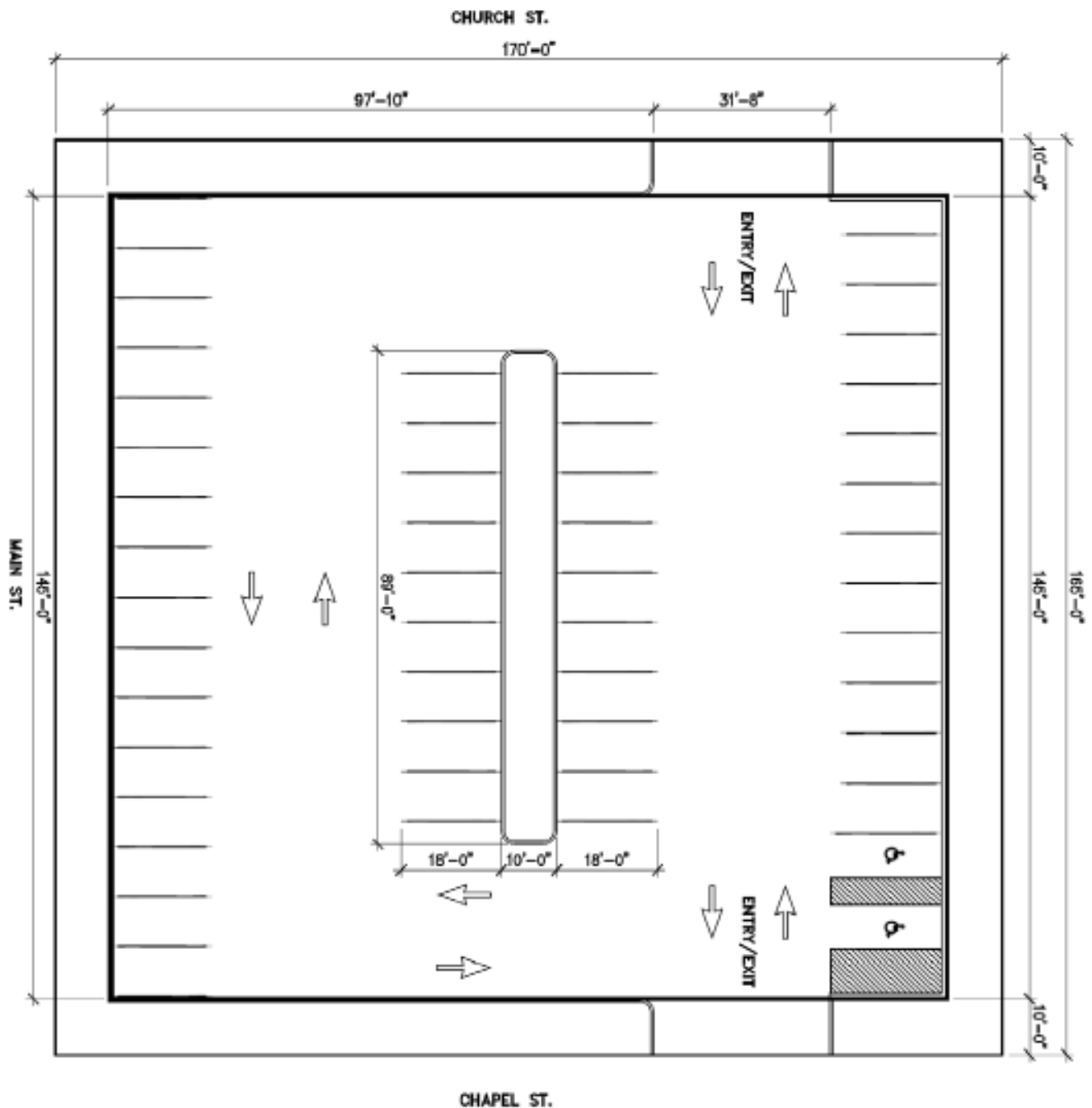
### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Figure 15: Option #3 - Post Office Site Layout



This layout yields 48 parking spaces (46 standard parking spaces plus 2 accessible spaces).

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Table 11: Option #3 Construction Cost Estimate

**CONCEPTUAL COST ESTIMATE FOR  
TOWN OF NEWMARKET  
OPTION #3**

TIER	GRADE AREA (ft <sup>2</sup> )	SUPPORTED AREA (ft <sup>2</sup> )	TOTAL GARAGE AREA (ft <sup>2</sup> )	# OF CAR STALLS
Grade Lot (elev. 0')	21,565		21,565	48
<b>TOTALS</b>	Parking Area 21,565	0		
	Total Area 21,565	0	21,565	48
<b>SQUARE FEET PER CAR STALL = 449</b>				

ITEM	DIV	DESCRIPTION	UNIT	TYPICAL COST/UNIT	QUANTITY	COST <sup>(7,8)</sup>	\$/SF Floor Area
1	2	Site Grading <sup>(1)</sup>	SF of Site	\$2.25	21,565	<b>\$48,500</b>	\$2.25
2	2	Existing Building Demolition <sup>(2)</sup>	LS	\$50,000.00	1	<b>\$50,000</b>	\$2.32
3	2	Asphalt Paving Removal <sup>(3)</sup>	SF	\$2.00	15,056	<b>\$30,100</b>	\$1.40
4	2	Asphalt Paving and Subbase <sup>(4)</sup>	SF	\$4.00	21,565	<b>\$86,300</b>	\$4.00
5	3	Concrete Curbing	LF	\$10.00	569	<b>\$5,700</b>	\$0.26
6	9	Stall Striping with Directional Arrows	Lump Sum	\$2,000.00	1	<b>\$2,000</b>	\$0.09
7	10	Signage	SF	\$0.30	21,565	<b>\$6,500</b>	\$0.30
8	15	Mechanical (Drainage) <sup>(5)</sup>	Lump Sum	\$15,000.00	1	<b>\$15,000</b>	\$0.70
9	16	Electrical (Site Lightng) <sup>(6)</sup>	Each	\$8,000.00	2	<b>\$16,000</b>	\$0.74
<b>SUBTOTAL</b>						<b>\$260,000</b>	\$12.06
GENERAL CONDITIONS						<b>\$26,000</b>	\$1.21
CONSTRUCTION CONTINGENCY						<b>\$52,000</b>	\$2.41
<b>TOTAL CONSTRUCTION COSTS <sup>(7,8)</sup></b>						<b>\$338,000</b>	\$15.67
<b>CARS = 48</b>						<b>CONST. \$/CAR</b>	<b>\$7,042</b>

**Notes:**

1. Costs to grade site after asphalt and building removal. Site is assumed to be level on grade areas of both tiers. Handling of Hazardous or regulated materials is excluded.
2. Costs include demolition of the existing Post Office building. Building estimated to be approximately 6,500 SF one story of normal masonry structure. Handling
3. Cost assumes the removal of upto 4" of asphalt and 6" of gravel subbase. Handling of Hazardous or regulated materials is excluded.
4. Cost assumes 6" gravel subbase and upto 4" of asphalt.
5. Mechanical costs for storm drainage within the parking areas and assumed length of associated piping.
6. Electrical costs for the installation of a site lighting pole with base and associated power wiring.
7. Excluding soft costs (i.e. design, surveying, testing, etc.)
8. Numbers rounded to the nearest thousand and reflect 2006 dollars.

## PHASE II MAIN STREET PARKING STUDY

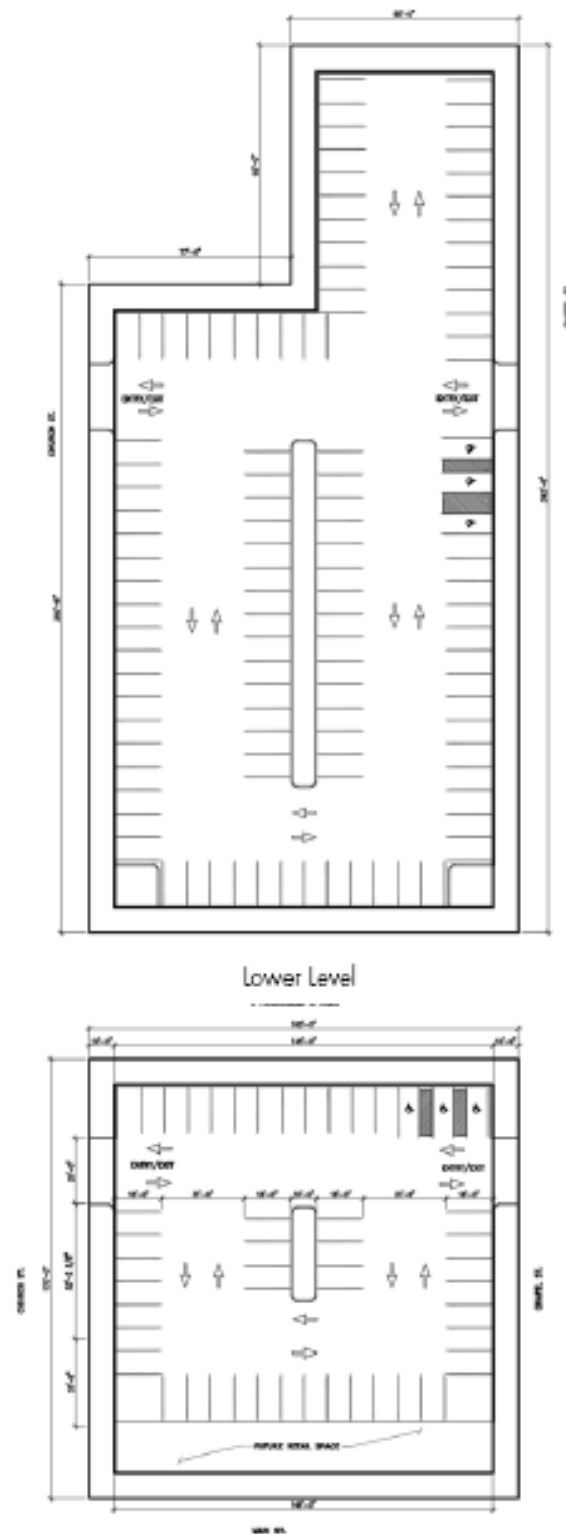
### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Figure 16: Option #4 - Combined Site Layout



This layout yields 153 parking spaces (147 standard parking spaces plus 6 accessible spaces).

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Table 12: Option #4 Construction Cost Estimate

**CONCEPTUAL COST ESTIMATE FOR  
TOWN OF NEWMARKET  
OPTION #4**

TIER	GRADE AREA (ft <sup>2</sup> )	SUPPORTED AREA (ft <sup>2</sup> )	TOTAL GARAGE AREA (ft <sup>2</sup> )	# OF CAR STALLS
Ground Tier (elev. 0')	21,565	0	21,565	47
Second Tier (elev. 11')	15,092	21,565	36,657	106
<b>TOTALS</b>				
	Parking Area	36,657	21,565	
	Total Area	36,657	21,565	58,222
<b>SQUARE FEET PER CAR STALL = 381</b>				153

ITEM	DIV	DESCRIPTION	UNIT	TYPICAL COST/UNIT	QUANTITY	COST <sup>(13,14)</sup>	\$/SF Floor Area
1	2	Soil Excavation, Disposal & Backfill Allowance <sup>(1,2)</sup>	CY	\$36.00	450	\$16,200	\$0.28
2	2	Site Grading	SF of Site	\$1.75	36,657	\$64,100	\$1.10
3	2	Retaining Wall Demolition <sup>(3)</sup>	LS	\$50,000.00	2	\$100,000	\$1.72
4	2	Existing Building Demolition	LS	\$80,000.00	1	\$80,000	\$1.37
5	2	Asphalt Paving Removal	SF	\$2.00	36,657	\$73,300	\$1.26
6	2	Underground Utilities & Subdrainage <sup>(5)</sup>	SF of Site	\$2.00	36,657	\$73,300	\$1.26
7	2	Asphalt Paving and Subbase <sup>(6)</sup>	SF	\$4.00	36,657	\$146,600	\$2.52
8	3	Footings & Foundations (Spread & Strip Footings) <sup>(4)</sup>	SF of Site	\$12.00	21,565	\$258,800	\$4.45
9	3	CIP Retaining Walls (up to 15' high)	SF of Wall	\$25.00	2,172	\$54,300	\$0.93
10	3	Concrete Curbing	LF	\$10.00	600	\$6,000	\$0.10
11	3	Concrete Slab-on-grade	SF of Ground	\$4.76	21,565	\$102,600	\$1.76
12	3	Precast concrete w/ erection <sup>(7,8)</sup>	SF of Supported	\$30.00	21,565	\$647,000	\$11.11
13	5	Miscellaneous Metals	Lump Sum	\$25,000.00	1	\$25,000	\$0.43
14	7	Perimeter Wall Dampproofing <sup>(9)</sup>	SF	\$2.00	2,172	\$4,300	\$0.07
15	9	Misc. Painting & Staining <sup>(10)</sup>	SF	\$0.16	21,565	\$3,500	\$0.06
16	9	Stall Striping with Directional Arrows	Per Stall	\$12.00	153	\$1,800	\$0.03
17	10	Signage	SF	\$0.30	58,222	\$17,500	\$0.30
18	15	Mechanical (Drainage and Standpipes) <sup>(11)</sup>	SF	\$1.13	58,222	\$65,800	\$1.13
19	16	Electrical (Lighting) <sup>(12)</sup>	SF	\$3.00	58,222	\$174,700	\$3.00
<b>SUBTOTAL</b>						<b>\$1,915,000</b>	<b>\$32.89</b>
GENERAL CONDITIONS							
				10.0%	of subtotal	<b>\$191,500</b>	<b>\$3.29</b>
CONSTRUCTION CONTINGENCY				20.0%	of subtotal	<b>\$383,000</b>	<b>\$6.58</b>
<b>TOTAL CONSTRUCTION COSTS <sup>(13,14)</sup></b>						<b>\$2,489,500</b>	<b>\$42.76</b>
<b>CARS = 153</b>						<b>CONST. \$/CAR</b>	<b>\$16,271</b>

**Notes:**

- Cost based on non-contaminated soil removal. Site is assumed to be level on grade areas of both tiers. Costs are based on excavation needed for removal of wall and that needed for garage foundations. Handling of Hazardous or regulated materials is excluded.
- Cost for rock excavation is excluded.
- Costs include demolition of the existing Post Office and Ledges buildings. See Options 2 & 3 for assumptions.
- Does not include costs associated with deep foundations.
- Costs include utility services run from adjacent right of way to new garage structure.
- Cost assumes 6" gravel subbase and upto 4" of asphalt.
- Precast concrete includes structural elements (columns, beams, walls, tees). Joint sealant for precast included.
- Facade assumed to be standard precast spandrels with sandblast finish.
- Dampproofing includes an asphaltic membrane with a drainage course applied to backs of all retaining walls.
- Painting and staining in isolated locations to assist in way finding.
- Mechanical costs for Class 1 standpipe and floor/roof drainage within the garage. Sprinklers and mechanical ventilation are excluded.
- Costs include garage power, distribution & lighting but excludes PRCS, CCTV, Security Equipment, emergency generator.
- Excluding soft costs (i.e. design, surveying, testing, etc.)
- Numbers rounded to the nearest thousand and reflect 2006 dollars.

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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PROJECT # 16-1870.00

Table 13: Option #5 Construction Cost Estimate

**CONCEPTUAL COST ESTIMATE FOR  
TOWN OF NEWMARKET  
OPTION #5**

TIER	GRADE AREA (ft <sup>2</sup> )	SUPPORTED AREA (ft <sup>2</sup> )	TOTAL GARAGE AREA (ft <sup>2</sup> )	# OF CAR STALLS
Ground Tier (elev. 0')	20,200	0	20,200	41
Second Tier (elev. 11')	7,820	13,267	21,087	52
<b>TOTALS</b>				
	Parking Area	28,020	13,267	
	Total Area	28,020	13,267	93
<b>SQUARE FEET PER CAR STALL = 444</b>				

ITEM	DIV	DESCRIPTION	UNIT	TYPICAL COST/UNIT	QUANTITY	COST <sup>(12,13)</sup>	\$/SF Floor Area
1	2	Soil Excavation, Disposal & Backfill Allowance <sup>(1,2)</sup>	CY	\$36.00	430	\$15,500	\$0.38
2	2	Site Grading	SF of Site	\$1.75	28,020	\$49,000	\$1.19
3	2	Retaining Wall Demolition <sup>(3)</sup>	LS	\$50,000.00	1	\$50,000	\$1.21
4	2	Existing Building Demolition <sup>(4)</sup>	LS	\$141,000.00	1	\$141,000	\$3.42
5	2	Asphalt Paving Removal	SF	\$2.50	16,750	\$41,900	\$1.01
6	2	Underground Utilities & Subdrainage <sup>(6)</sup>	SF of Site	\$2.00	28,020	\$56,000	\$1.36
7	2	Asphalt Paving and Subbase <sup>(7)</sup>	SF	\$4.00	28,020	\$112,100	\$2.72
8	3	Footings & Foundations (Spread & Strip Footings) <sup>(5)</sup>	SF of Site	\$12.00	13,267	\$159,200	\$3.86
9	3	CIP Retaining Walls (up to 15' high)	SF of Wall	\$25.00	1,800	\$45,000	\$1.09
10	3	Concrete Curbing	LF	\$10.00	925	\$9,300	\$0.23
11	3	Concrete Slab-on-grade	SF of Ground	\$4.76	13,267	\$63,200	\$1.53
12	3	CIP Stair	LS	\$6,500.00	1	\$6,500	\$0.16
13	3	Precast concrete w/ erection <sup>(8,9)</sup>	SF of Supported	\$30.00	13,267	\$398,000	\$9.64
14	5	Miscellaneous Metals	Lump Sum	\$25,000.00	1	\$25,000	\$0.61
15	7	Perimeter Wall Dampproofing <sup>(10)</sup>	SF	\$2.00	1,800	\$3,600	\$0.09
16	9	Misc. Painting & Staining <sup>(11)</sup>	SF	\$0.16	13,267	\$2,100	\$0.05
17	9	Stall Striping with Directional Arrows	LS	\$2,500.00	1	\$2,500	\$0.06
18	10	Signage	SF	\$0.30	41,287	\$12,400	\$0.30
19	15	Mechanical (Drainage and Standpipes) <sup>(12)</sup>	SF	\$1.13	41,287	\$46,700	\$1.13
20	16	Electrical <sup>(13)</sup>	SF	\$3.00	41,287	\$123,900	\$3.00
<b>SUBTOTAL</b>						<b>\$1,362,900</b>	<b>\$33.01</b>
GENERAL CONDITIONS							
CONSTRUCTION CONTINGENCY							
<b>TOTAL CONSTRUCTION COSTS <sup>(14,15)</sup></b>						<b>\$1,771,800</b>	<b>\$42.91</b>
<b>CARS = 93</b>						<b>CONST. \$/CAR</b>	<b>\$19,052</b>

**Notes:**

1. Cost based on non-contaminated soil removal. Site is assumed to be level on grade areas of both tiers. Costs are based on excavation needed for removal of wall and that needed for garage foundations. Handling of Hazardous or regulated materials is excluded.
2. Cost for rock excavation is excluded.
3. Cost for removal of existing wall. Assumed size 12'h by 12"T by 145' L. Demolition of other existing surfaces or structures is excluded.
4. Cost for removal of existing supported parking level assumes a structure 60' by 140' with a 6" CIP deck supported by W24 beams at 5' o.c. Handling of hazardous or regulated material is excluded (i.e. Lead paint).
5. Does not include costs associated with deep foundations.
6. Costs include utility services run from adjacent right of way to new garage structure.
7. Cost assumes 6" gravel subbase and upto 4" of asphalt.
8. Precast concrete includes structural elements (columns, beams, walls, tees). Joint sealant for precast included.
9. Facade assumed to be standard precast spandrels with sandblast finish.
10. Dampproofing includes an asphaltic membrane with a drainage course applied to backs of all retaining walls.
11. Painting and staining in isolated locations to assist in way finding.
12. Mechanical costs for Class 1 standpipe and floor/roof drainage within the garage. Sprinklers and mechanical ventilation are excluded.
13. Costs include garage power, distribution & lighting but excludes PRCS, CCTV, Security Equipment, emergency generator.
14. Excluding soft costs (i.e. design, surveying, testing, etc.)
15. Numbers rounded to the nearest thousand and reflect 2006 dollars.



## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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PROJECT # 16-1870.00

### OPTIONS COST SUMMARY

The cost of each option is compared in the following table with regard to absolute cost and cost per added public parking space.

Table 14: Option Cost Analysis

OPTION #	DESCRIPTION	TOTAL CAPACITY	COST ESTIMATE	ASSESSED LAND VALUE <sup>1</sup>	TOTAL COST
1	Quonset Hut Lot	217	\$ 770,900	\$ 900,000	\$1,670,900
2	Ledges Site	43	\$ 275,600	\$ 804,800	\$1,080,400
3	Post Office Site	48	\$ 338,000	\$ 1,082,600	\$1,420,600
4	Combined Site	153	\$2,489,500	\$ 1,887,400	\$4,376,900
5	Rivermoor Landing Site	93	\$1,771,800	\$ 900,000	\$2,671,800

OPTION #	TOTAL CAPACITY	TOTAL COST	COST/SPACE (GROSS) <sup>(2)</sup>	NET GAIN (SPACES)	COST/SPACE (NET) <sup>(3)</sup>
1	217	\$1,670,900	\$ 7,700	111	\$ 15,053
2	43	\$1,080,400	\$ 25,126	43	\$ 25,126
3	48	\$1,420,600	\$ 29,596	36	\$ 39,461
4	153	\$4,376,900	\$ 28,607	139	\$ 31,488
5	93	\$2,671,800	\$ 28,729	18	\$ 148,433

Notes:

1. Initial acquisition cost was roughly \$900,000 per Town officials, which included building removal and improvements.
2. Total base construction cost, divided by total project capacity.
3. Total base construction cost, divided by net added parking capacity.

Parking shortfalls projected for Blocks 2 and 4 are expected to be offset by the substantial surplus of public parking contained in Block 1 and the smaller surplus on Block 3. Therefore, construction of Option #1, the Library Lot, which is among the most cost effective sources of new parking supply, is recommended for completion in coordination the proposed mill redevelopment project to meet its future parking needs.

However, the grouping of Bocks 5, 6, and 7 are effectively beyond the reasonable walking distance from the parking surplus in Block 1. Thus, the most reasonable objective is to seek to supply the projected future parking shortage in Bocks 5, 6, and 7 with approximately 50 new parking spaces within the central CBD core of Newmarket.

Each of the remaining options #2 thru #5 presents interesting pros and cons that should be considered.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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PROJECT # 16-1870.00

Option	Pros	Cons
#2 Ledges Lot	<ul style="list-style-type: none"> <li>• Satisfies most of the area's public parking demand (43 spaces).</li> <li>• All spaces represent new public parking supply.</li> <li>• Owner may be a willing seller as the cost of rehab of existing structure exceeds value.</li> <li>• Site is close to Stone Church, which generates significant parking demand.</li> </ul>	<ul style="list-style-type: none"> <li>• Site conditions increase construction cost. As a result the cost per space is similar to structured parking.</li> <li>• Uphill walk to site may be difficult for some patrons.</li> <li>• Building is on the National Historic Register.</li> </ul>
#3 P.O. Lot	<ul style="list-style-type: none"> <li>• Centrally located to CBD.</li> <li>• Superior visibility and wayfinding.</li> <li>• Site is already a familiar parking location to patrons.</li> <li>• Site is level to Main Street.</li> <li>• Excellent site for future commercial/retail development.</li> <li>• Site is close to Stone Church.</li> </ul>	<ul style="list-style-type: none"> <li>• Post Office may not be a willing seller.</li> <li>• Number of added spaces does not meet the projected 2016 zone deficit.</li> <li>• Acquisition cost increases the total project cost.</li> <li>• The cost per space is similar to structured parking.</li> <li>• Displacement of existing spaces increases the net cost per added space.</li> </ul>
#4 Combined Structure	<ul style="list-style-type: none"> <li>• Superior visibility and wayfinding.</li> <li>• Site slope facilitates access to two levels without ramping.</li> <li>• Structure frontage offers retail storeroom opportunity.</li> <li>• Centrally located to CBD.</li> <li>• Site is level to Main Street.</li> <li>• Excess parking capacity could be available to residents.</li> </ul>	<ul style="list-style-type: none"> <li>• Post Office may not be a willing seller.</li> <li>• Exceeds the projected 2016 zone deficit.</li> <li>• Acquisition costs of Ledges + P.O. increase the total project cost.</li> <li>• The cost per space is higher than typical structured parking.</li> </ul>

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Option	Pros	Cons
#5 Rivermoor Landing Structure	<ul style="list-style-type: none"><li>• Replaces existing depreciated parking structure.</li><li>• Superior visibility and wayfinding.</li><li>• Deck is already familiar parking location to patrons.</li><li>• Centrally located to CBD.</li><li>• Offers opportunity for "shared parking".</li></ul>	<ul style="list-style-type: none"><li>• Rivermoor may not be a willing seller or partner.</li><li>• Acquisition cost increases the total project cost.</li><li>• Little number of new spaces significantly increases the cost per added space. Cost per added space appears to be prohibitive.</li><li>• Number of added spaces does not meet the projected 2016 zone deficit.</li><li>• Lower level is not visible from roadway, limiting the utility of these spaces.</li><li>• Preservation of historic river view precludes vertical expansion.</li></ul>

In addition to the points listed above, replacing the existing structure should have merit for the owner(s). The existing structure is of steel construction, and is in deteriorating condition. The remaining useful life is estimated at 10 years, more or less. Reconstructing this parking facility as a public/private venture would offer the benefits of reduced financing costs due to municipal tax free bonding capacity, and access to municipal parking management. However, Rivermoor Landing may not be a willing seller or partner due to the need to have clear title to parking for tenants. In any event, the few number of new spaces significantly increases the cost per added space, which appears to make this option unfeasible.

### SHARED PARKING

The current Title III: Land Use Code and Regulations; Section 3.02 (4) recognizes and allows shared parking. Shared Parking means that parking spaces are shared by more than one user, which allows parking facilities to be used more efficiently. Shared

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parking takes advantage of the fact that most parking spaces are only used part time by a particular motorist or group, and many parking facilities have a significant portion of unused spaces, with utilization patterns that follow predictable daily, weekly and annual cycles.

There are various degrees of shared parking. A parking space assigned to a specific user is not shared at all. On-street parking spaces located in a busy, mixed use urban area tends to be the most shared. In between are parking spaces that are shared among various employees at a particular worksite, parking that is shared by customers at a variety of businesses located in one site, or arrangements by one facility to use another facilities parking at certain times, such as a tavern that allows its parking spaces to be used on Sunday mornings by attendees at a nearby church. An office complex can efficiently share parking facilities with a restaurant or theaters, since offices require maximum parking during weekdays, while restaurants and theaters require maximum parking during evenings and weekends. An assigned employee parking space is typically used about 2,000 hours per year, while an on-street parking space in a busy area often gets three times as much use. Efficient sharing of spaces can allow parking requirements to be reduced significantly. The total amount of parking can be reduced 40-60% compared with standard off-street parking requirements for each destination (Smith, 1983). Barton-Aschman Associates (1982) and ITE (1995) provide specific recommendations for shared parking implementation.

In general, the potential for sharing parking is greatest in areas where land use activities are clustered, and the benefits from sharing parking are greatest due to high parking costs. Priorities for sharing parking are listed below.

- 1) *On-street parking on commercial streets.* These are the most convenient parking spaces and so should be managed for maximum turnover to serve short stops (shopping and other errands), by limiting time or applying short-term pricing. This usually means limits of less than 2 hours.
- 2) *Off-street public parking facilities and on-street parking outside the commercial streets.* These are less convenient parking spaces and so should be managed for longer stops, including parking by employees, long-term visitors and residents.

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- 3) *Off-street private parking facilities.* These are often the most convenient parking spaces for a particular site, but may also be convenient for other nearby users. They tend to be used to serve other nearby facilities with different peaks. For example, since a bar has peak demand during Saturday night and a church has peak demand during Sunday morning, they can efficiently share parking if located near to each other (usually within a block or so).

The concept of Shared Parking is well known, but sometimes discouraged by traditional planning practices. Conventional planning often reflects an assumption that communities want the greatest possible supply of parking provided at the lowest possible price. Standards used in most communities require each building or facility include a minimum amount of off-street parking supply, based on studies of peak-period demand. Transportation professionals and public officials often prefer generous, simple and consistent minimum parking standards because they are easy to administrate and minimize spillover problems. All of these factors contribute to inefficient use of parking resources: many parking lots are seldom or never full, even during peak periods, and most parking spaces are unused most of the time.

Walker reviewed the location and utilization rates of private parking lots within the study area during weekdays and evenings, and attempted to identify private facilities that may serve to mitigate projected parking deficits and estimate available capacity at the peak weekday and evening hours. Unfortunately, few private parking lots are of sufficient size or appropriate for shared parking.

However, four such privately-owned facilities were identified as potential candidates: the Rivermoor Landing garage, the Post Office parking lot, the Water Street/Joyce's Kitchen lot and the Bank of America lot. All are used *defacto* for public parking as none are effectively enforced, despite signage to the contrary.

To facilitate the process of establishing a shared parking arrangement, the following sample form is offered as a starting point for negotiations. Walker Parking Consultants does not practice law and recommends that any agreement be reviewed by a qualified attorney.

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#### Figure 18: Model Shared Use Agreement

##### Shared Use Agreement for Parking Facilities

This Shared Use Agreement for Parking Facilities, entered into this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, between \_\_\_\_\_, hereinafter called lessor and \_\_\_\_\_, hereinafter called lessee. In consideration of the covenants herein, lessor agrees to share with lessee certain parking facilities, as is situated in the City of \_\_\_\_\_, County of \_\_\_\_\_ and State of \_\_\_\_\_, hereinafter called the facilities, described as: [Include legal description of location and spaces to be shared here, and as shown on attachment 1.]

The facilities shall be shared commencing with the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and ending at 11:59 PM on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, for [insert negotiated compensation figures, as appropriate]. [The lessee agrees to pay at [insert payment address] to lessor by the \_\_\_\_ day of each month [or other payment arrangements].] Lessor hereby represents that it holds legal title to the facilities.

##### The parties agree:

##### 1. USE OF FACILITIES

This section should describe the nature of the shared use (exclusive, joint sections, time(s) and day(s) of week of usage.

**-SAMPLE CLAUSE -** [Lessee shall have exclusive use of the facilities. The use shall only be between the hours of 5:30 PM Friday through 5:30 AM Monday and between the hours of 5:30 PM and 5:30 AM Monday through Thursday.]

##### 2. MAINTENANCE

This section should describe responsibility for aspects of maintenance of the facilities.

This could include cleaning, striping, seal coating, asphalt repair and more.

**-SAMPLE CLAUSE -** [Lessor shall provide, as reasonably necessary asphalt repair work. Lessee and Lessor agree to share striping, seal coating and lot sweeping at a 50%/50% split based upon mutually accepted maintenance contracts with outside vendors. Lessor shall maintain lot and landscaping at or above the current condition, at no additional cost to the lessee.]

##### 3. UTILITIES and TAXES

This section should describe responsibility for utilities and taxes. This could include electrical, water, sewage, and more.

**-SAMPLE CLAUSE -** [Lessor shall pay all taxes and utilities associated with the facilities, including maintenance of existing facility lighting as directed by standard safety practices.]

##### 4. SIGNAGE

This section should describe signage allowances and restrictions.

**-SAMPLE CLAUSE -** [Lessee may provide signage, meeting with the written approval of lessor, designating usage allowances.]



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#### 5. ENFORCEMENT

This section should describe any facility usage enforcement methods.

***-SAMPLE CLAUSE -** [Lessee may provide a surveillance officer(s) for parking safety and usage only for the period of its exclusive use. Lessee and lessor reserve the right to tow, at owners expense, vehicles improperly parked or abandoned. All towing shall be with the approval of the lessor.]*

#### 6. COOPERATION

This section should describe communication relationship.

***-SAMPLE CLAUSE -** [Lessor and lessee agree to cooperate to the best of their abilities to mutually use the facilities without disrupting the other party. The parties agree to meet on occasion to work out any problems that may arise to the shared use.]*

#### 7. INSURANCE

This section should describe insurance requirements for the facilities.

***-SAMPLE CLAUSE -** [At their own expense, lessor and lessee agree to maintain liability insurance for the facilities as is standard for their own business usage.]*

#### 8. INDEMNIFICATION

This section should describe indemnification as applicable and negotiated. This is a very technical section and legal counsel should be consulted for appropriate language to each and every agreement.

***-NO SAMPLE CLAUSE PROVIDED-***

#### 9. TERMINATION

This section should describe how to or if this agreement can be terminated and post termination responsibilities.

***-SAMPLE CLAUSE -** [If lessor transfers ownership, or if part of all of the facilities are condemned, or access to the facilities is changed or limited, lessee may, in its sole discretion terminate this agreement without further liability by giving lessor not less than 60 days prior written notice. Upon termination of this agreement, Lessee agrees to remove all signage and repair damage due to excessive use or abuse. Lessor agrees to give lessee the right of first refusal on subsequent renewal of this agreement.]*

#### 10. SUPPLEMENTAL COVENANTS

This section should contain any additional covenants, rights, responsibilities and/or agreements.

***-NO SAMPLE CLAUSE PROVIDED-***

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date Set forth at the outset hereof.

[Signature and notarization as appropriate to a legal document and as appropriate to recording process negotiated between parties.]



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#### REVIEW OF ZONING ORDINANCE

Walker Parking Consultants reviewed those portions of the current Municipal Code of the Town of Newmarket that impact parking in the CBD. These documents include:

##### Title III: Land Use Code and Regulations

Chapter IV: Zoning Ordinance, adopted February 14, 1996; as Amended through February 16, 2005; and

Chapter VI: Site Plan Review Regulations, adopted August 22, 1995; as Amended through March 18, 2003

Walker recommends revising these municipal ordinances to improve parking operations based on the following best practices.

1. The number of spaces required for each land use should be updated to incorporate the base ratios published in Shared Parking, Second Edition.

It is important to note that the convention used today is spaces/1,000 square feet, not 1 space per xxx square feet.

As it is difficult to establish parking requirements for restaurants on a per seat basis early in design, Walker recommends use of the Shared Parking ratios based on gross floor area (GFA).

2. Standards listed should be updated. As ITE Parking Generation is now in its 3rd Edition; Walker suggests that the ordinance reference the latest edition, which would automatically revise the standards whenever the source is updated.

Parking by Weant and Levinson is very old and both authors are at least semi-retired and therefore, is not likely to be updated. Walker suggests that the references to this book be replaced by references to the ITE Transportation Planning Handbook, also latest edition.

3. Walker recommends that the shared parking provision be updated to reference Shared Parking Second Edition, or latest edition.

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4. The table for handicap spaces slightly mis-quotes ADAAG 91, which requires that spaces be determined by "total spaces in lot" and thus lot by lot, not on total spaces provided on site. ADAAG 2004, which is not yet in force, modifies the van stall design and the required number of van spaces. It would be appropriate for the Town to adopt those requirements now, as it is the latest and greatest thinking. The design requirements are final and published, what is not yet completed is the Department of Justice rulemaking (re: when it will be enforced). Again, Walker suggests that the ordinance be revised to simply refer to ADAAG, latest edition adopted by USDOJ for Title III of the ADA.
5. The aisles for angled parking are significantly more generous (by several feet) for angled parking at 75 and 60 degrees than are typically required, and the overall module will be further enlarged by rotation of a stall to the specified angle. Walker recommends that the ordinance be modified to specify the module width (the out-to-out dimension of two rows of parking stalls plus the aisle in between) rather than stall and aisle. To achieve a similar level of comfort, Walker recommends a 61' module for 90 degree parking, a 57' module for 75 degree parking (one-way traffic flow), a 53'6" module for 60 degree parking, and a 49' module for 45 degree parking.

When we prepare ordinances for cities, we generally like to provide explicit dimensions to avoid both designers and staff having to use trigonometry to assure that the design meets the code. An alternative is to refer to the design standards in Architectural Graphics Standards or the new APA companion Urban Design Standards, Latest Edition, or Dimensions of Parking, Latest Edition.

Note: The ITE withdrew their most recent standard because it is based on separated small car and large car stalls, which the ITE no longer considers appropriate. In its place, the ITE's Technical Council recommends the standards published in Dimensions of Parking. For this community, Architectural Graphics Standards book or the APA book offer standards that are a little more generous and more conservative, and are consistent with the 90 degree module that is now recommended.



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6. Walker strongly recommends that Newmarket not require the traffic control islands specified. Liability for trips and falls at curbs has become a significant problem for owners. Curbs in the middle of parking lots, as well as snow removal issues are the two biggest contributors. Over time, we rarely see landscaping in the middle of lots thrive, due to salt-laden drippings off vehicles, and snow removal is significantly impacted by this type of island, contributing to the likelihood that there will be more trips and falls. Landscaping in the middle of lots also can act as a screening device that provides concealment to criminals.

Therefore we recommend that landscaping be concentrated on the perimeter rather than in the middle of lots. We recommend that curbs (including curbed islands) and wheel stops shall only be provided at the following locations: 1) at the perimeter of a parking facility, 2) where intended to protect adjacent construction, such as around stairs, elevators, or parking structure spandrel panels, or 3) to protect required landscaping in the interior of a surface parking lot.

7. While it is good to minimize glare and spillover lighting, it is Walker's opinion that the Town ought to be equally concerned with minimum lighting levels within parking facilities due to liability and CPTED (Crime Prevention Through Environmental Design) considerations. Walker recommends that the Town require minimum lighting levels. For example: "Lighting for off-street parking facilities shall meet the minimum recommended guidelines of RP-20, *Lighting for Parking Facilities* (latest edition) as published by the Illuminating Engineers Society of America."

#### PEER REVIEW

Walker conducted a review of parking conditions in the CBD for five peer communities. Walker and Town administrators selected the parking operations of Portsmouth, Durham, Dover, Exeter and Hampton for review. This review includes signage, metering (if applicable), meter rates and fine schedules for each peer community. The goal of this task is to compare and contrast current conditions in these surrounding peer municipalities with current conditions in Newmarket, and make recommendations (as appropriate) for improvement.

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#### *DURHAM DOWNTOWN PARKING*

The Town of Durham provides on street metered parking and some metered and permitted off-street parking. Daytime on-street metered spaces are subject to regulatory signs, pavement markings, fire lanes, fire hydrants, and time limits.

The Town maintains a year 'round Overnight Parking Ban, whereby vehicles may not be parked on Main Street, Jenkins Court, Ballard Street or any town-owned parking lot between 1:00 AM and 6:00 AM, or for any amount of time between those hours.

The Town also maintains a Winter Parking Ban to aid snow removal. During Winter Parking Ban, no vehicle may be parked on any Durham road or town-owned parking lot between 1:00 AM and 6:00 AM, November 1 through April 1. There are no exceptions. The Town of Durham uses local towing services to tow cars that interfere with snow removal.

On-street metered parking is provided on Main Street between Mill Road and Garrison Avenue. Meters charge \$0.25 for every 15 minutes (\$1.00 per hour) for a maximum of 2-hours on Main Street.

Some on-street parking spaces on Main Street and surrounding streets are limited by signage to a maximum of 1 hour from 6 am to 1 am, with no parking allowed from 1 am to 6 am, which is consistent with the Overnight Parking Ban.

On-street metered parking spaces on Depot Road charge \$0.25 for every 15 minutes (\$1.00 per hour) for a maximum of 3-hours.

Meters in the 57-space Pettee Brook Parking Lot charges \$0.25 for every 15 minutes (\$1.00 per hour) for a maximum of 12 hours.

Each Durham parking meter is designed to time two parking spots; one to the left and one to the right of the meter. "SEL SPC" means, "select space;" push the button closest to the occupied space and that space will be properly timed. All Town of Durham parking meters are active until 9:00 PM Monday through Saturday, holiday's excepted. If a vehicle is parked in a metered spot for more than the time limit, it is subject to ticketing - even if the meter has been paid!



Durham on-street signage.



Depot Road meters.

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The Town also provides off-street parking in the Pettee Brook Parking lot (commonly known as the Store 24 lot); the metered parking lot also on Pettee Brook Lane, the “permit only” lot on Pettee Brook Lane, the United States Post Office parking lot on Madbury Road; the lot behind Durham Town Hall on Newmarket Road, and the Train Station Depot Road parking lot.

Parking permits for the new 170-space Train Station Depot Road are available through the Durham Police for \$1,000 per year. Sales are notably unsuccessful at this price (Only one permit sold thru July 2006).

Business parking permits are sold for the Post Office Lot, the Pettee Brook Lots for \$150 per year. Business parking permits are sold for the Madbury Road Lot for \$125 per year. Residential permits are free. Signage in these permit lots are posted as:

Permit Parking Only  
6:00 AM – 6:00 PM Mon. – Sat.  
No Parking  
1:00 AM – 6:00 PM

All parking on the campus of the University of New Hampshire is regulated by UNH Parking Services and NOT the Town of Durham. UNH parking is not considered to be comparable to Newmarket.

The Mill Road Plaza parking area is a privately owned lot and is open only to those people that are actively shopping in any Mill Road Plaza business or those that have been issued permits by the property manager. The property management posts rules and tows violators.

One enforcement officer works enforcement in the downtown during the season. The enforcement presence is reduced to two random days during the workweek to reduce expenses during the summer months. The 2006 enforcement budget is estimated by the enforcement supervisor at \$37,800 + vehicle expenses of approximately \$5,000.

The Durham Police report that local merchants actually “scream” for enforcement. As a result of this program, there is significant compliance in the use of the parking meters and time restrictions where meters are not present.



Two head meter



Depot Road Lot



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**Table 15: Durham Parking Violations**

<b>VIOLATION</b>	<b>FINE</b>
Parking in Excess of Time Limit(s)	\$ 20.00
Expired Permit/Meter	\$ 20.00
No Meter Permit	\$ 20.00
Parking on a Sidewalk	\$ 20.00
Parking in a Crosswalk	\$ 20.00
Obstructing Lane of Travel	\$ 20.00
Blocking Driveway/Private Drive	\$ 20.00
Parking in Posted Loading Zone	\$ 20.00
All Night Parking	\$ 20.00
Winter Parking Ban	\$ 20.00
Other	\$ 20.00
Parking in a Fire Lane	\$ 50.00
Illegal Parking in a Handicapped Space	\$ 72.00
Obstructing a Fire Hydrant	\$ 50.00
No Residential Parking Permit	\$ 20.00

Durham issues a \$72 parking ticket for violating a handicapped accessible parking space. Actually, State law permits Durham to assess a \$250 fine, but the Town chooses not to assess a fine that high for first time violators.

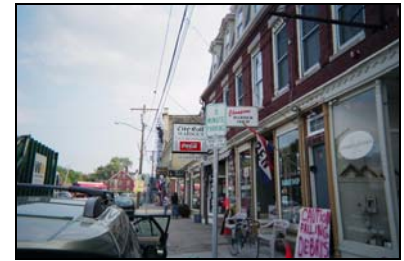
The Town of Durham does not regulate parking in the Mill Road Plaza. However, the Durham Police Department issues parking tickets for fire lane violations and for vehicles parked in handicap accessible spots without a permit.

### *CITY OF DOVER DOWNTOWN PARKING*

The Dover Parking and Traffic Bureau is operated as an Enterprise Fund. This means that revenues and expenses are segregated from the General Fund. Ideally, operating profits are retained for parking. The Dover Parking and Traffic Bureau is managed by the Police Department.

Dover has no on-street meters. Most of the downtown CBD core is signed as:

2 Hr. Parking - 7:00 AM to 8:00 PM



Dover 30 min. parking.

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A few spaces are signed as:

30 Minute Parking - 6:00 AM to 8:00 PM

Hours of on-street parking enforcement were increased in 2005 from 5:00 PM to 8:00 PM due to the needs of business and restaurants vs. the presence of Mill employees.

The Parking and Traffic Bureau owns and operates 11 parking lots. These off-street parking lots are detailed as follows:

**Table 16: City of Dover Parking Lots**

LOCATION	LOT	ALLOCATIONS		MONTHLY	
	CAPACITY	METERS	PERMITS	RATE	
Orchard Street Lot	124	62	62	\$	40.00
First Street Lot	77	-	77	\$	30.00
Third Street Lot <sup>(1)</sup>	82	-	-	\$	-
Chestnut Street Lot <sup>(1)</sup>	40	-	-	\$	-
School Street Lot	69	-	69	\$	40.00
Portland Street Lot	44	-	44	\$	20.00
Library Lot <sup>(2)</sup>	205	-	150	\$	20.00
Locust Street Lot	29	-	29	\$	40.00
River Street Lot	175	-	175	\$	10.00
Water Street Lot	20	-	20	\$	20.00
Belknap Lot	20	20	-	\$	-
<b>TOTAL</b>	<b>885</b>	<b>82</b>	<b>626</b>		

Notes:

1. No restrictions on use and no fee for use.

2. 30 spaces assigned for 2 Hr parking and 16 set aside for Library patrons.

Despite the published permit rate, residents living within 200 to 500 feet are charged only \$5.00 per month per permit.

Meter rates for the 82 Dover off-street meters are as follows:

Nickel (\$0.05)	6 Minutes
Dime(\$0.10)	12 Minutes
Quarter (\$0.25)	30 Minutes
Effective Rate	\$0.50 per hour
4 hr. meters	No maximum time

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Long-term daily meter parkers must feed the meter after 4 hours, which is legal. Thus, eight hours of meter parking would cost \$4.00. Permit and meter parking is enforced from 7:00 AM to 6:00 PM, Monday thru Friday.

**Table 17: City of Dover Parking Violations**

<b>VIOLATION</b>	<b>BASE FINE</b>	<b>FINAL NOTICE</b>	<b>SUMMONS PENALTY</b>
Parking in a Restricted Place	\$ 15.00	\$ 30.00	\$ 50.00
Winter Parking Ban	\$ 15.00	\$ 30.00	\$ 50.00
Winter Parking - Multiple Violations (5+)	\$ 100.00	\$ 100.00	\$ 100.00
Parking Against Traffic Flow	\$ 15.00	\$ 30.00	\$ 50.00
Parking in a Crosswalk <sup>(1)</sup>	\$ 15.00	\$ 30.00	\$ 50.00
Parking on a Sidewalk	\$ 15.00	\$ 30.00	\$ 50.00
Obstructing a Driveway <sup>(2)</sup>	\$ 15.00	\$ 30.00	\$ 50.00
Obstructing a Fire Hydrant <sup>(3)</sup>	\$ 15.00	\$ 30.00	\$ 50.00
Obstructing a Traffic Control Device <sup>(4)</sup>	\$ 15.00	\$ 30.00	\$ 50.00
Parking next to a Yellow Line or Curb	\$ 15.00	\$ 30.00	\$ 50.00
Parking more than 12" from Curb	\$ 15.00	\$ 30.00	\$ 50.00
Parking in a Fire Lane	\$ 50.00	\$ 80.00	\$ 100.00
Parking in Posted Loading Zone	\$ 15.00	\$ 30.00	\$ 50.00
Illegal Parking in a Handicapped Space	\$ 250.00	\$ 250.00	\$ 250.00
Obstructing Handicapped Access Aisle	\$ 50.00	\$ 80.00	\$ 100.00
Illegal Parking in a Permit Only Lot	\$ 15.00	\$ 30.00	\$ 50.00
Other	\$ 15.00	\$ 30.00	\$ 50.00
Parking Outside Marked Lines	\$ 15.00	\$ 30.00	\$ 50.00
Over Time Limit/ Expired Meter <sup>(5)</sup>	\$ 15.00	\$ 30.00	\$ 50.00
Henry Law Park (Park or Canoe Launch)	\$ 50.00	\$ 80.00	\$ 100.00

Notes:

1. Includes parking within 20' of an intersection.

2. Includes parking within 25' of a driveway.

3. Includes parking within 10' of a hydrant.

4. Includes parking within 20' of a traffic control device.

5. Fine is the same regardless of length of stay.

The 2007 Dover Parking and Traffic Bureau budget has been formally approved. The 2007 budget, shown on the following page in Table 18, reflects accurate historical data, but does not anticipate any significant changes in rates, occupancies, or expenses.

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**Table 18: 2007 Dover Parking and Traffic Bureau Budget**

<b>REVENUE:</b>	<b>TOTAL</b>
20 Meter Lot	\$ 8,000
62 Meter Lot	\$ 25,000
Resident & Business Permits	\$ 90,000
Citations	\$ 150,000
<b>Total</b>	<b>\$ 273,000</b>
<b>EXPENSES:</b>	
Enforcement Payroll	\$ (60,000)
Secretary	\$ (36,000)
Operating Overhead	\$ (157,000)
<b>Total</b>	<b>\$ (253,000)</b>
<b>PROJECTED OPERATING MARGIN</b>	<b>\$ 20,000</b>

*Source : Dover Parking and Traffic Bureau*

In recent years, the City of Dover proposed resolutions to address two distinct parking issues – resident parking permits, and “shuffling.”

Resident Parking Permits – To provide parking to residents of the downtown area, the following resolution was offered:

1. The Police Department is authorized to sell and distribute parking passes for residents of the downtown area defined as those areas in a B2, UMUD, or CWD zone.
2. A maximum of two (2) residential parking passes per residential unit may be issued to property owners abutting or located within 200 feet of a municipally owned parking lot in said zones, upon certification that such on-site parking is unavailable. Parking passes shall be issued for specific vehicles owned by occupants of such residential units.
3. Residential parking passes shall be issued for three (3) months at a cost of fifteen dollars (\$15.00) to be paid at the time of the issuance of the pass.
4. Residential parking passes shall be intended for purposes incidental to pass holders residing in said areas, and shall not intended to authorize continuous long-term day parking in municipal lots.

## PHASE II MAIN STREET PARKING STUDY

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5. Residential parking passes authorize the holder to park in any municipally owned parking lot, but do not guarantee a parking space in a particular lot, nor authorize on-street parking.
6. Any misrepresentation regarding the application for or use of a residential parking pass, any unauthorized transfer, or any other misuse of the parking pass shall be cause for revocation by the Police Department.

This resolution was approved in 1988. Since that time, the resident parking permit was reduced to \$5.00 and the radius is effectively administered up to 500 feet.

Reparking or "Shuffling" – Shuffling is a major impediment to reserving on-street and short-term parking for use by shoppers and patrons. This problem was found to be common in downtown Dover. Parking turnover studies conducted by Dover supported reports of Mill employees and business owners occupying prime on-street parking spaces and taking two hour "parking breaks" to move their cars to overcome the two hour parking limit. In the course of timed parking enforcement, the police department learned that some downtown businesses actually encouraged their employees to utilize on-street parking to free up parking on owned parking lots.

Dover sought to reduce this phenomenon by offering an amendment to the Revised Code of the City of Dover that would modify the restriction regulating two hour timed parking in the downtown area. The recommended remedy is to change Dover's parking regulations to prohibit parking for more than two consecutive hours in any two-hour zone or metered parking throughout the downtown area. This is acknowledged to be difficult to enforce, but would help preserve the intent of two-hour limit and metered parking to generate turnover and provide short-term parking for business patrons, not management or employees. To date, the proposed ordinance was referred to a public hearing on September 13, 2006, but has not been approved.

### *CITY OF PORTSMOUTH DOWNTOWN PARKING*

Portsmouth provides over 2,500 off-street and on-street public parking spaces in its commercial downtown district and waterfront area. Structured and surface off-street parking is inventoried by the city as follows:



Portsmouth on-street parking.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Table 19: City of Portsmouth Lots and Garages

ID#	FACILITY	CAPACITY	LIMITATIONS
1	High-Hanover Garage	900	Open 24/7
2	Bridge Street Lot	67	2-hour limit
3	Vaughn Mall Lot	77	2-hour limit
4	Wright Avenue Lot	43	2-hour limit
5	Parrott Avenue Lot	186	72-hour limit, free parking
6	Masonic Lot	70	12-hour limit, free parking*
7	South Mill Lot	90	72 hour limit, free parking

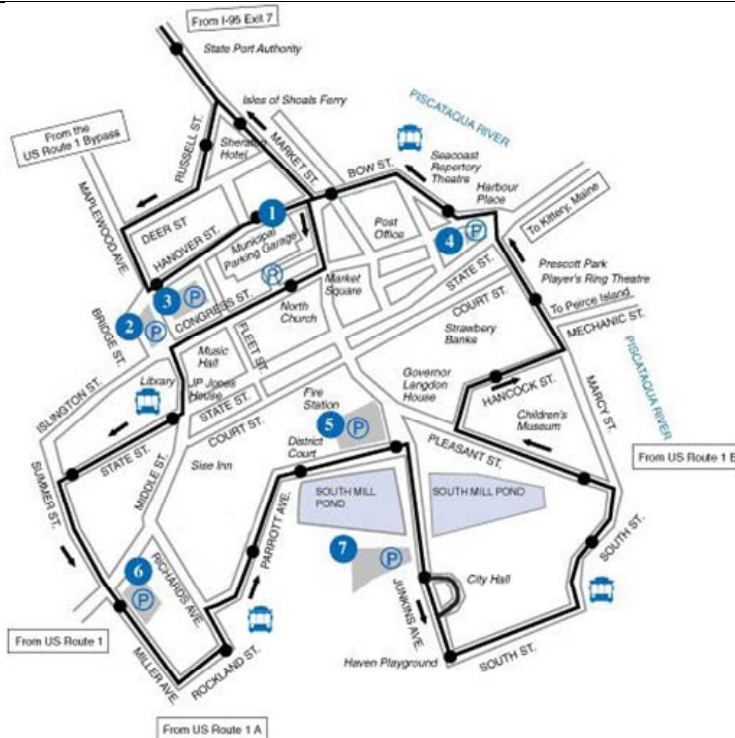
**TOTAL 1,433**

\* Lot is only open 6 AM to 7:30 PM, Monday thru Saturday

Source: Portsmouth Parking and Transportation Division

The Portsmouth Parking and Transportation Division manage approximately 1,100± on-street parking spaces.

Figure 19: Portsmouth Parking Map



Source: Portsmouth Parking and Transportation Division

While the City charges for those parking facilities in the core, the more peripheral parking lots are free. Free trolley service is



## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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operated by Coast Trolleys seasonally from June 26 to Sept. 3<sup>rd</sup>, to provide linkage between the more remote parking facilities and most CBD destinations. The seasonal fare is \$0.50 for adults and free for children under five.

COAST Trolley Fares and most regular fares are now \$1.00 per trip for hop-on passengers, regardless of route and distance traveled. Monthly passes are \$35.00. (This is the first price increase in 10 years). Monthly passes are good on all COAST, COAST Trolley and UNH Wildcat Transit routes. Children 5 years and under ride Free on COAST Trolley and Buses. Passengers boarding Route 1 and 2 buses in Somersworth have to pay an additional \$1.00 surcharge even with a monthly pass. The Portsmouth parking and shuttle map is reproduced in the following graphic.

Monthly lease rates in Portsmouth municipal facilities are as follows:

- 24-Hour Pass: \$100.00/month
- 12-Hour Day Pass (7 AM to 7:00 PM): \$80.00/month
- 12-Hour Night Pass (7:00 PM to 7:00 AM): \$50.00/month

The minimum period of time to lease a parking space is one month. A \$20.00 card deposit is required upon registration. Specific parking spaces are not marked for private use by individuals.

All municipal parking is managed by the Parking and Transportation Division. The Division is a sub-section of the Department of Public Works. In FY 2005, the Division collected \$3,613,719 in parking revenues against total operating overhead costs of \$1,008,225. The Division is self-supporting, retaining adequate revenues to support operations through a Special Revenue Fund and depositing the net balance in the city's General Fund.

Electronic parking meters are used by the City to create turnover (short-term) parking for downtown businesses. The rate at all metered parking spaces (on street, off street and in the parking garage) is \$0.75 per hour. Parking meters are in effect Mondays through Saturdays from 9:00 AM to 7:00 PM. There are 15-minute, 2-hour and 4-hour metered time zones downtown.

Parking fines must be paid within 30 calendar days. Any person receiving more than twenty (20) parking violations in any one year



Portsmouth lot meters.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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(July 1 to June 30) must pay an additional \$25.00 for each subsequent violation. The city holds the registered owner accountable for the accumulation of violations.

Table 20: Portsmouth Parking Violations

VIOLATION	BASE	AFTER
	FINE	30 DAYS
15-Minutes Over Posted Limit	\$ 15.00	\$ 30.00
30-Minutes Over Posted Limit	\$ 15.00	\$ 30.00
1-Hour Over Posted Limit	\$ 15.00	\$ 30.00
2-Hours Over Posted Limit	\$ 15.00	\$ 30.00
4-Hours Over Posted Limit	\$ 15.00	\$ 30.00
Expired Meter	\$ 10.00	\$ 25.00
Parking within 15' of a Fire Station	\$ 15.00	\$ 30.00
Parking on a Sidewalk	\$ 25.00	\$ 50.00
Obstructing Traffic During Construction	\$ 15.00	\$ 30.00
Double Parking	\$ 15.00	\$ 30.00
Parking Against Traffic Flow	\$ 15.00	\$ 30.00
Back to Curb	\$ 15.00	\$ 30.00
Parking more than 12" from Curb	\$ 15.00	\$ 30.00
Parking in a 'No Parking' area	\$ 20.00	\$ 40.00
Parking Too Close to an Intersection	\$ 20.00	\$ 40.00
Emergency Snow Ban	\$ 25.00	\$ 35.00
Parking within an Intersection	\$ 25.00	\$ 50.00
Parking in a Crosswalk	\$ 25.00	\$ 50.00
Obstructing a Fire Hydrant	\$ 25.00	\$ 50.00
Obstructing a Driveway	\$ 25.00	\$ 50.00
Obstructing a Street	\$ 25.00	\$ 50.00
Parking in a Fire Lane	\$ 25.00	\$ 50.00
20 or more violations in a year*	\$ 25.00	\$ 50.00
Illegal Parking in a Handicapped Space	\$ 100.00	\$ 150.00
Parking in a 'Resident Only' zone	\$ 25.00	\$ 50.00

\* Fiscal year starting July 1st and concluding June 30th.

Appeals may be made to the Parking Clerk at Portsmouth City Hall within 20 calendar days of issuance. Parkers with five or more unpaid parking violations or have in excess of \$75.00 in unpaid parking violations per registered owner will be subject to towing or immobilization.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Only people with authorized license plates, hangtags or placards issued to them may park in a designated handicapped parking stall. Unauthorized parking in a handicapped parking space carries a \$100.00 fine. The registrant may park free of charge for up to 24-hours in the High-Hanover Parking Facility or in designated unmetered on-street parking stalls. Handicapped plates, hangtags or placards do not allow a vehicle to access restricted parking areas such as truck loading or no parking zones.

Unmetered zones are posted throughout the city on green and white signs. These zones allow parking for free of charge for up to 15 minutes, 30 minutes, 1 hour and 2 hours as posted. After the posted time the vehicle must leave the parking space or be subject to ticketing. Parking in free municipal lots is limited to 72 hours, after which time the vehicle is subject to ticketing.

Truck Loading Zones are reserved for commercial vehicles that are 1) trucks and 2) actively loading. Commercial trucks that are actively loading can park in these zones free of charge for the time limit posted.

### TOWN OF EXETER PARKING

Parking in Exeter is managed by the Police Department. Exeter has no on-street meters. Parking is regulated in the town center by designated timed parking zones. Most of the downtown CBD core is signed as:

2 Hr. Parking - 8:00 AM to 6:00 PM

Time restricted parking is designated in downtown Exeter as follows (does not include school zones which are generally related to public school zones or the Exeter Academy):

#### Two – Hour Parking Limit

Center Street	Both sides of street from Water Street to the municipal parking lot.
Front Street	Center Isle at the Bandstand: Westerly side from Water Street to the driveway of Congregational Church. Easterly side from Water to Court Street.
Spring Street	From William's Court south 100' to Front Street, on east side.
String Bridge	Both sides from Water to Chestnut in 60' of spaces allowed opposite Library.
Water Street	Both sides from Clifford Street to Main Street except between Center Street and Town Hall driveway.



Exeter parking signage.

## PHASE II MAIN STREET PARKING STUDY

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#### One – Hour Parking Limit

Franklin Street	In front on Long Block on the northerly side.
Front Street	North side of street for a distance of 80 feet west of Railroad Avenue.

#### 30 – Minute Parking Limit

Bow Street	South side adjacent to the Public Safety Complex.
Front Street	Monday through Saturday: North side from the driveway of First Congregational Church to Center Street. South side from Court Street to 5 spaces east of driveway of the U.S. Post Office. In front of 148-152 Front Street, south side.

#### 15 – Minute Parking Limit

Front Street	South side, 4 spaces east of Post Office entrance, Monday through Saturday.
--------------	---

Signage allows the on-street parking on the square only from 8:00 AM to 6:00 PM.

Within the Town of Exeter, from December 1 to March 15, no parking is permitted on any public street between 12:00 midnight and 6:00 am. It is also unlawful to park within the public R-O-W during a snow emergency. To provide some residential parking during the winter parking ban, all night parking is permitted on Pleasant Street if proper application is made to the office of the Town Manager and a permit is issued in compliance with rules established by the Board of Selectman and the Town Manager.

Exeter also provides three off-street parking lots, as follows:

Table 21: City of Exeter Parking Lots

Location	Size
Water Street Lot	140-space municipal lot to the rear of Town Offices
Center Street	30-space municipal lot
Kossuth St./Front St.	48-space lot behind Exeter Academy Boat House

All night parking is permitted in Town lots without a permit. However, on nights of snow removal, vehicle owners must listen for fire alarms at 7:00 PM, 8:00 PM and 9:00 PM and must be prepared to move their vehicles before 1:00 AM.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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The following amendment to the Zoning Ordinance, Article 5.6.3 Off-Street Parking, replaces existing text with the following: "Except that the Planning Board may grant reductions in the number of required off-street parking spaces in conjunction with it is site review if the applicant submits proposals for shared parking. The intent of this provision is to grant discretionary review authority to the Planning Review Board in order to promote:

1. Better utilization of parking areas, including shared parking,
2. A reduction in impervious surface, and/or
3. Conservation of open space lands and buffers

In its discretion, the Planning Board shall require specific information detailing user parking needs and schedules. The Board may also require parking lot buffers and/or landscaping."

One full-time police officer is dedicated by the police department for parking enforcement. The Police Department engages a commercial towing service to remove any abandoned or illegally parked vehicle that creates or constitutes a traffic hazard, blocks the use of a fire hydrant, blocks the use of a driveway, or may obstruct snow removal operations.

The operator or owner must pay a fine within 72 hours of the time when a notice of a violation is attached to the vehicle. First offense is \$7.00. In the case of a second offense in the same day, the fine is \$15.00, and in the case of a third offense in the same day, the fine is \$25.00.

**Table 22: Town of Exeter Parking Violations**

<b>VIOLATION</b>	<b>FINE</b>
Parked in Excess of the Posted Limit	\$ 7.00
Parking in a 'No Parking' area	\$ 7.00
Parking in a Crosswalk	\$ 7.00
Double Parking	\$ 7.00
Obstructing a Driveway	\$ 7.00
Obstructing a Fire Hydrant	\$ 7.00
Parking in a Fire Lane	\$ 7.00
Emergency Snow Ban	\$ 7.00
Parking on a Sidewalk	\$ 7.00
Illegal Parking in a Handicapped Space	\$ 50.00
Other	\$ 7.00

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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The Chamber of Commerce proposed the construction of a municipal parking structure. The Historic Committee defeated this proposal. A proposal to install on-street parking meters was also defeated.

#### TOWN OF HAMPTON PARKING

Parking in Hampton is managed by the Recreation Department. Hampton has no on-street meters. Parking is regulated in the town center by designated timed parking zones. Most of this area is signed as:

1 Hr. Parking - 6:00 AM to 10:00 PM

Separate signs designate:

No Parking - 10:00 PM to 6:00 AM  
November 15 to March 15

Other parking zones are provided for include 10 minute parking (5:00 AM - 1:00 PM), 30 minute parking (9:00 AM to 5:00 PM) as well as 20 minute and 15 minute Parking zones.

The Town of Hampton constructed the 167-space High Street Municipal Parking Lot in the downtown. Two hour parking is allowed between the hours of 6:00 AM and 9:00 PM only, within the lined spaces in the High Street Municipal Parking Lot, as indicated by signs at the two entrances, except those designated as "All Day/Overnight" parking spaces along the entire easterly boundary of the lot, as indicated by the signs.

Hampton Beach has three public lots: Ashworth Avenue, Island Path and the Church Street Parking Lots. Except for vehicles displaying a current and valid parking lease sticker obtained from the Town, it is unlawful to park in these parking lots between 2:00 AM and 7:00 AM.

While the High Street Municipal Parking Lot is free, parking in the Hampton Beach lots is paid. The fee for a permit sticker is \$50 per month from October 15, 2006 to May 15, 2007. The fee will be \$900 for the May 15, 2007 to October 15, 2007 period.

Between November 15th each year to March 15th, it is unlawful for any vehicle to be parked between 1:00 AM and 7:00 AM on any public street or highway in the Town of Hampton. In the event



Hampton parking lot signage.



Hampton on-street signage.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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of a snow storm requiring plowing, as deemed necessary by the Director of Public Works, a "Snow Emergency" is called by the Chief of Police. The Chief of Police contacts two (2) radio stations to notify the public that such a ban exists, specify the start of the snow emergency, and estimate when the snow emergency will be called off. It is unlawful to park along roadways or any municipal parking lot during a Snow Emergency, or park in such a way that interferes with snow removal. When deemed necessary the Public Works Director will order any such vehicle to be towed and stored at the owner's expense.

On-street parking time restrictions are generally not enforced downtown unless requested by a property owner. Enforcement is provided by the Recreation Department in Hampton and by the Hampton Police Department in Hampton Beach. Failure to pay a violation within 5 days from the date of issue will result in an additional \$30 late fee.

**Table 23: Town of Hampton Parking Violations**

<b>VIOLATION</b>	<b>FINE</b>
Parking in a 'No Parking' area	\$ 30.00
Parking in Loading Zone	\$ 30.00
Obstructing a Driveway	\$ 30.00
Parking on a Sidewalk	\$ 30.00
Parking in a Crosswalk	\$ 30.00
Obstructing a Fire Hydrant*	\$ 60.00
Parking in a Fire Lane	\$ 60.00
Parking in Excess of Posted Time Limit	\$ 25.00
Parking Overnight During Winter Ban	\$ 30.00
Parking During Emergency Snow Ban	\$ 30.00
Parking in an Intersection	\$ 30.00
Illegal Parking in a Handicapped Space	\$ 75.00
Parking in a 'Permit Only' zone	\$ 30.00
Other	\$ 30.00

\* Or parking within 15' of a hydrant.

### PARKING FINE/METER RATE COMPARISON

The parking violation fine information is summarized in the following table.



# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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**Table 24: Parking Fine Summary**

<b>CITY/TOWN:</b>	Newmarket	Durham	Dover	Portsmouth	Exeter	Hampton
<b>VIOLATION</b>						
Overtime Parking/Expired Meter	\$ 15.00	\$ 20.00	\$ 15.00	\$ 10.00	\$ 7.00	\$ 25.00
Prohibited Time Period	\$ 15.00	\$ 20.00	\$ 15.00	\$ 15.00	\$ 7.00	\$ 25.00
Parking in a Loading Zone	\$ 15.00	\$ 20.00	\$ 15.00	\$ 20.00	\$ 7.00	\$ 30.00
Parking in a Restricted Zone	\$ 15.00	\$ 20.00	\$ 15.00	\$ 20.00	\$ 7.00	\$ 30.00
Parking in a 'No Parking' Zone	\$ 15.00	\$ 20.00	\$ 15.00	\$ 20.00	\$ 7.00	\$ 30.00
Double Parking	\$ 15.00	-	-	\$ 15.00	\$ 7.00	\$ 30.00
Parking Against Traffic Flow	\$ 15.00	\$ 20.00	\$ 15.00	\$ 15.00	\$ 7.00	-
Parked Outside Lines	\$ 15.00	\$ 20.00	\$ 15.00	-	\$ 7.00	-
Obstructing Alley/Private Drive	\$ 20.00	\$ 20.00	\$ 15.00	\$ 25.00	\$ 7.00	\$ 30.00
Obstructing Crosswalk/Sidewalk	\$ 20.00	\$ 20.00	\$ 15.00	\$ 25.00	\$ 7.00	\$ 30.00
Obstructing Intersection	\$ 20.00	\$ 20.00	\$ 15.00	\$ 25.00	\$ 7.00	\$ 30.00
Obstructing Traffic Lane	\$ 20.00	\$ 20.00	-	\$ 25.00	\$ 7.00	-
Obstructing Fire Hydrant	\$ 20.00	\$ 50.00	\$ 15.00	\$ 25.00	\$ 7.00	\$ 60.00
Parking in Handicapped Zone	\$ 300.00	\$ 72.00	\$ 250.00	\$ 100.00	\$ 50.00	\$ 75.00
Other (Winter/Snow Ban)	\$ 15.00	\$ 20.00	\$ 15.00	\$ 25.00	\$ 7.00	\$ 30.00
<u>Other (not in Newmarket)</u>						
Obstructing a Fire Lane	-	\$ 50.00	\$ 50.00	\$ 25.00	\$ 7.00	\$ 60.00
Parking Without a Permit	-	-	\$ 15.00	-	-	\$ 30.00
Parking in a 'Residents Only' Zone	-	\$ 20.00	-	\$ 25.00	-	-
Obstructing a Traffic Control Device	-	-	\$ 15.00	-	-	-
Parking in Handicap Access Aisle	-	-	\$ 50.00	-	-	-
Parking More Than 12" From Curb	-	-	\$ 15.00	\$ 15.00	-	-
Obstructing Traffic During Construction	-	-	-	\$ 15.00	-	-
Second Offense Same Day	-	-	-	-	\$ 15.00	-
Third Offense Same Day	-	-	-	-	\$ 25.00	-
20 or More Violations in a Year	-	-	-	\$ 25.00	-	-
Amount at Summons	-	-	Doubles	Doubles	-	\$ 30.00

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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The five peer communities have citation schedules that designate similar transgressions, but vary to some degree. For this reason, fines are compared by the average typical low-value fine, the average mid-value fine, the average typical high-value fine, and the HC accessible space violation fine. The comparable daily citations fines of these peer communities are summarized and compared to the current on-street parking policies of Newmarket in the following table.

**Table 25: Parking Fine Comparison**

PEER COMMUNITY	LOW VIOLATION	MID VIOLATION	HIGH VIOLATION	H/C VIOLATION
Durham	\$ 20.00	\$ 50.00	\$ 50.00	\$ 72.00
Dover	\$ 15.00	\$ 50.00	\$ 100.00	\$ 250.00
Portsmouth	\$ 10.00	\$ 20.00	\$ 25.00	\$ 100.00
Hampton	\$ 25.00	\$ 30.00	\$ 60.00	\$ 75.00
Exeter	\$ 7.00	\$ 7.00	\$ 7.00	\$ 50.00
MEDIAN	\$ 15.00	\$ 30.00	\$ 50.00	\$ 75.00
MEAN	\$ 15.40	\$ 31.40	\$ 48.40	\$ 109.40
<b>Newmarket</b>	<b>\$ 15.00</b>	<b>\$ 20.00</b>	<b>\$ 20.00</b>	<b>\$ 300.00</b>
Deviation <sup>(1)</sup>	\$ (0.40)	\$ (11.40)	\$ (28.40)	\$ 190.60
Adjusted Mean <sup>(2)</sup>	\$ 17.50	\$ 37.50	\$ 58.75	\$ 124.25
Deviation <sup>(3)</sup>	\$ (2.50)	\$ (17.50)	\$ (38.75)	\$ 175.75

Notes:

1. Deviation from the Mean for the total sample

2. Mean adjusted to exclude Exeter

3. Deviation from the Adjusted Mean.

As seen in the preceding table, the Newmarket citation fines are below the means of its peers in each category. Fines for mid-fee and high-fee violations are well below the means of the comparables. The H/C space violation fine is above the mean. Walker recommends that Newmarket initiate an immediate plan to increase parking fines for these parking violations.

Obviously, if on-street parking meters are installed, a fee structure equal to \$0.75 per hour would be recommended. In comparison to the peer communities, the existing 2 hour parking restriction is well supported.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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It is recommended that Newmarket change the permitted parking hours from 5:00 AM – 6:00 PM to 5:00 AM – 8:00 PM. This change will allow enforcement to occur later in the evening, preserving valuable on-street spaces for more short term parkers. The impact to The Stone Church and other entertainment venues would be minimal if entertainment acts are scheduled to begin after 8:00 PM.

**Table 26: Meter Rate Comparison**

PEER COMMUNITY	METER RATE <sup>(1)</sup>	PERMITTED DURATION <sup>(2)</sup>	HOURS OF ENFORCEMENT <sup>(3)</sup>
Durham	\$ 1.00	2.0	6:00 AM - 1:00 AM
Dover	\$ 0.50	2.0	7:00 AM - 8:00 PM
Portsmouth	\$ 0.75	2.0	9:00 AM - 7:00 PM
Hampton	N/A	1.0	6:00 AM - 10:00 PM
Exeter	N/A	1.0	8:00 AM - 6:00 PM
MEDIAN	\$ 0.75	2.0	7:00 AM - 8:00 PM
MEAN	\$ 0.75	1.6	7:12 AM - 8:48 PM
Newmarket	\$ -	2.0	5:00 AM - 6:00 PM
Deviation <sup>(4)</sup>	\$ (0.75)	0.4	N/A
Adjusted Mean <sup>(5)</sup>	\$ 0.75	1.8	7:00 AM - 8:30 PM
Deviation <sup>(6)</sup>	\$ (0.75)	0.3	N/A

*Notes:*

1. Rate per each hour of parking.
2. Maximum length of stay allowed per local ordinance.
3. Period during which parking regulations are actively enforced.
4. Deviation from the Mean for the total sample
5. Mean adjusted to exclude Exeter
6. Deviation from the Adjusted Mean.

## ENFORCEMENT REVIEW

Walker reviewed current enforcement efforts in the CBD and makes the following recommendations for improving enforcement.

Police effort is focused primarily on traffic control. Parking enforcement is a low priority. This year, the police dept. reported that approximately 660 parking tickets were issued through August 2006. These tickets include significant numbers of Winter Ban

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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violations and Snow Emergency violations. However, parking regulations are only sporadically enforced, usually only when requested.

Increased enforcement will be required to change the parking culture. The cost of an improved parking enforcement program is estimated at \$30,000 to \$40,000 per year including allocation of part-time labor, vehicle expense and supplies. The majority of this cost may be recouped through increased citation and meter revenues.

### MAIN STREET RECONSTRUCTION PROJECT REVIEW

Walker has reviewed Underwood Engineering's preliminary design sketch for the finished project. A copy of this design is reproduced on the following page. This plan identifies 89 CBD parking spaces.

Walker has also reviewed the current signage along Main Street and abutting roadways, and pedestrian's paths between candidate facilities for shared use and popular destinations. On the basis of this review of limited materials available to date, Walker makes the following preliminary recommendations for improving parking and wayfinding signage for pedestrians and motorists seeking parking within the CBD.

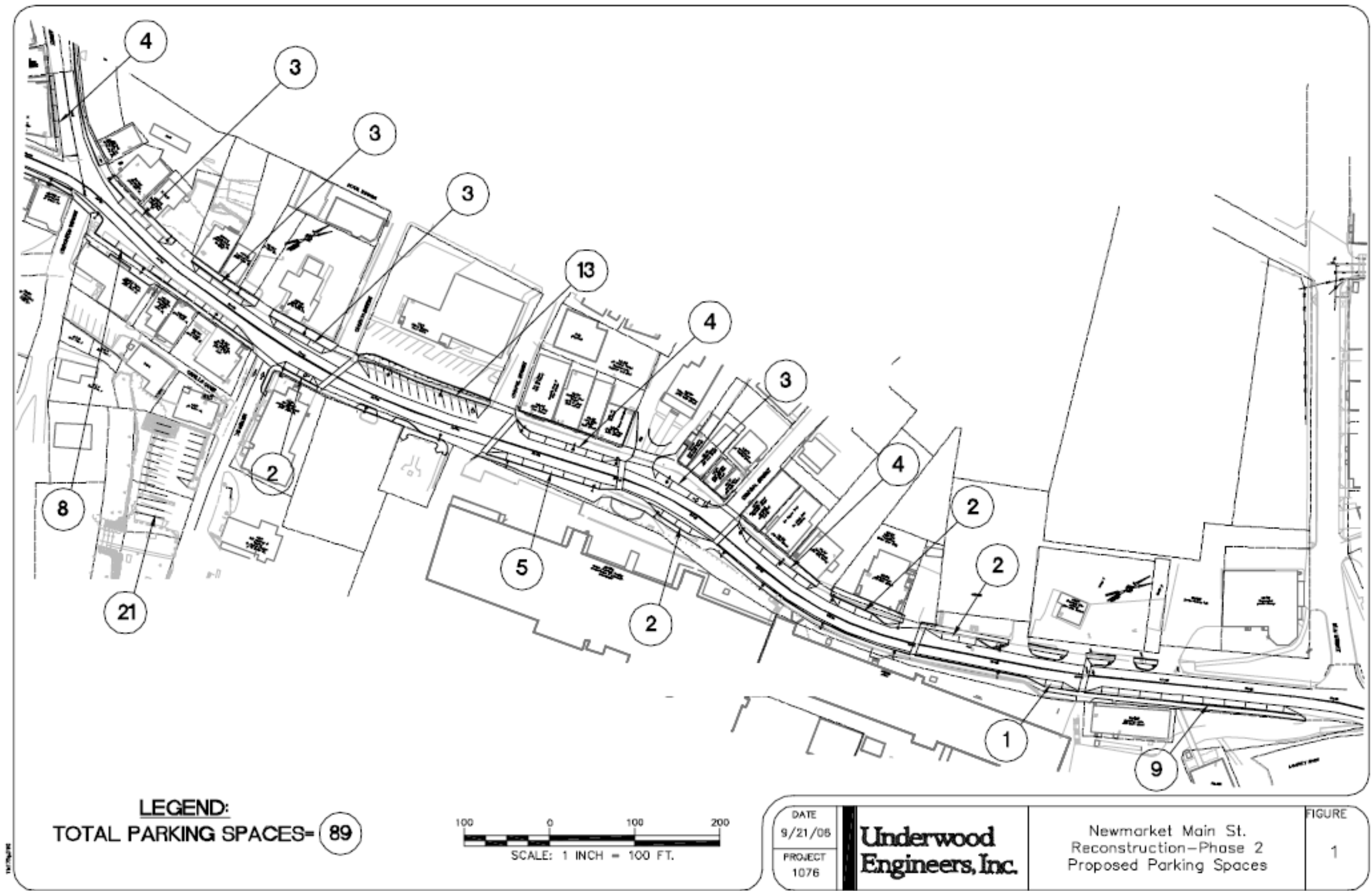
1. Of significant concern is increased warning and signage for crosswalks across Main Street (SR 108). The preliminary site plan indicates five (5) crosswalks will be maintained. The most heavily used is the crosswalk between the Rivermoor Landing deck on the east side of the street and the U.S. Post Office on the west side of the street. This crosswalk is reinforced by temporary signage. This crosswalk requires significant examination. Increased warning is recommended due to:

- Heavy traffic vs. heavy pedestrian use
- Poor sight distance
- History of problems
- Proper signage is mandatory (MUTCD)
- Additional warning (e.g. flashing lights) is optional, but should be considered based on engineering judgment.



Main St. crosswalk

Figure 20: Post-Construction Curbside Parking Inventory





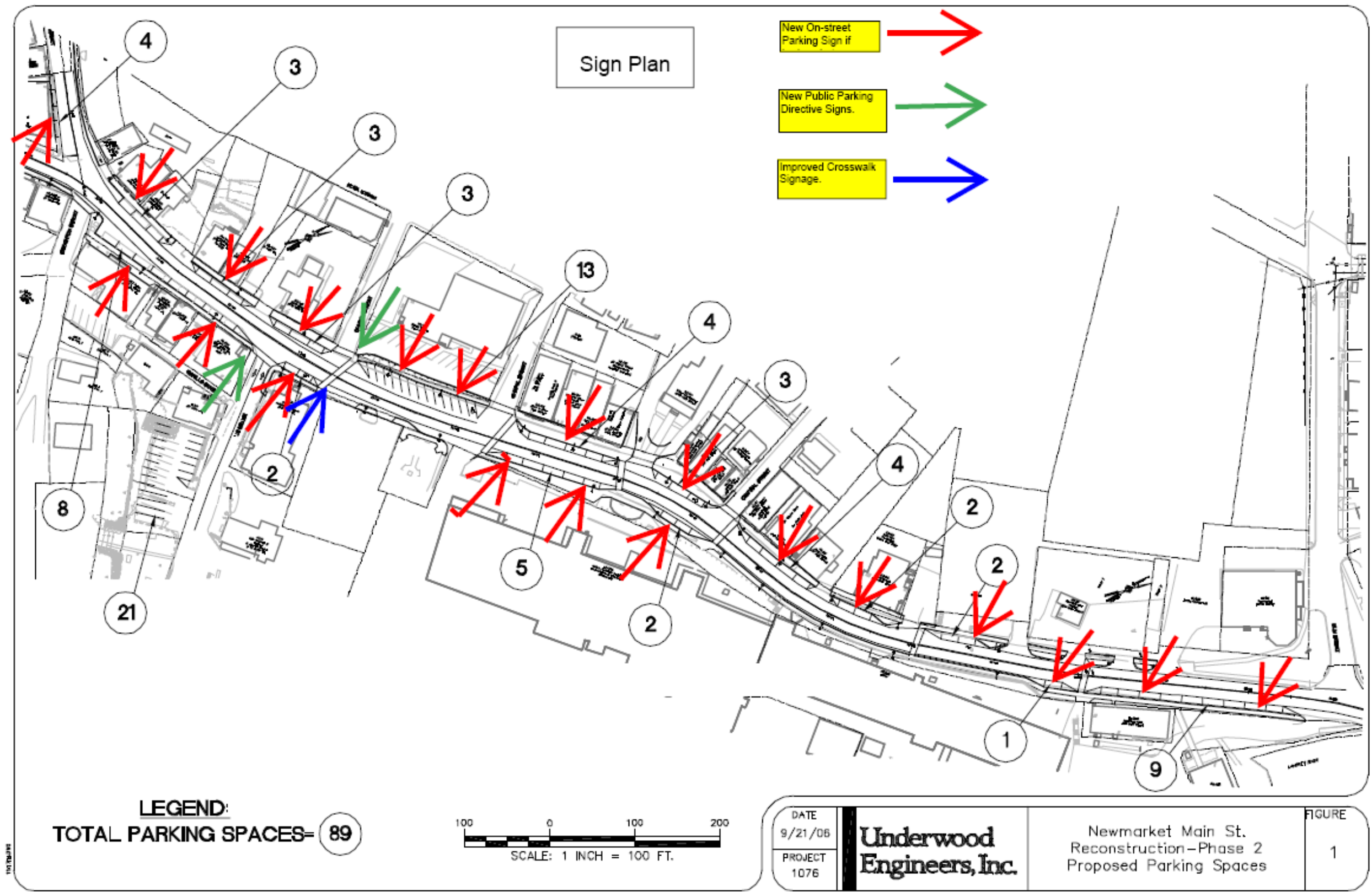
PHASE II MAIN STREET PARKING STUDY

SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Figure 11: Recommended Signage Upgrades



## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



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Recommended improvements include side mounted diamond crosswalk markers posted on both sides of the street facing oncoming traffic, with or without flashing yellow lights.

#### Minimum Crosswalk Signage Recommended:



Installed cost of improved crosswalk signage is estimated at \$500 per crosswalk. Cost of improved crosswalk signage with flashing yellow lights is estimated at \$2,000 to \$3,500 per crosswalk.

Signage must meet the requirements of MUTCD, which has been adopted by all states as a requirement to receive Federal aid for state highways. This is the standard of care.

Mid-block crosswalks shall not be signalized if they are located within 90 m (300 ft) from the nearest traffic control signal, unless the proposed traffic control signal will not restrict the progressive movement of traffic. Flashing yellow lights permit vehicular traffic to proceed through the intersection or past such signal indication only with caution.

2. The Underwood Engineering preliminary design sketch identifies sixteen block faces having on-street parking spaces. Of these, four have more than 4 spaces per section. It is recommended that Newmarket change the permitted parking hours from 5:00 AM – 6 PM to 5:00 AM – 8:00 PM. Thus, 20 signs notifying parkers of the availability of on-street parking is recommended.



Water St. Sign (Faded).



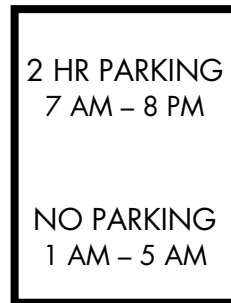
## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



**WALKER**  
PARKING CONSULTANTS

PROJECT # 16-1870.00



12" x 18"

Installed cost of signs with poles is estimated at \$200 each. Program cost for 20 signs is estimated at \$4,000.

3. Current directional signs to public parking are considered to be adequate, but the Water Street locator sign is faded. If the Ledges option is selected, an additional sign will be required on Main Street pointing west on Church Street or Chapel Street, as two signs for this lot would not be needed. Installed cost of new signs with poles is estimated at \$500 each. Program cost to install 3 new signs (Water Street Lot, Library Lot and Ledges) is estimated at \$1,500.

4. The Underwood Engineering preliminary design sketch identifies 68 on-street parking spaces. Despite the current time limit, on-street parking spaces continue to be occupied by long-term parkers. Many of these abusers are owners and employees of Main Street businesses. Walker recommends that the Town reconsider installing on-street parking meters. Meters are a more enforceable method of on-street parking control, and could generate an important new revenue stream.

The cost of a simple, coin-operated parking meter, pole and installation is estimated at \$500 to \$600 each. On-street parking meters are recommended at each space. Thus, the cost to install 68 meters is estimated at \$35,000 to \$45,000.

Parking meter manufacturers now offer "**free spin meters**" that allow a person to park and activate the meter (button or spin) for a set amount of free time. This requires the installation of programmable electronic parking meters. Free-time meters allow those errand parkers that are picking up a package, paying a bill, or dropping off something at a store to obtain a limited amount of free parking. Such meter mechanisms are available from several meter manufacturers at an installed cost that is similar to standard



Railroad St. Sign.

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



**WALKER**  
PARKING CONSULTANTS

PROJECT # 16-1870.00

electronic meters (\$500 to \$600 each). One use per customer may be allowed by ordinance. Stronger enforcement is required to issue citations to repeat free spin abusers.



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## APPENDIX A – DEMAND PROJECTIONS

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit A: Current Peak Weekday Demand Projections

WEEKDAY																				
Land Use	User	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Midnite
Retail	Customers	0	1	3	9	14	19	22	23	22	22	19	17	18	20	19	13	6	3	0
	Employees	0	1	3	4	6	6	6	6	6	6	6	6	6	6	6	5	3	1	0
Social Club	Customers	0	0	0	0	1	14	26	32	39	46	54	79	103	115	115	115	102	79	56
	Employees	0	2	4	6	12	12	12	12	12	11	10	10	11	12	12	12	12	9	7
Bar/Restaurant	Customers	0	0	0	0	0	23	45	69	57	59	45	67	89	101	101	101	91	69	46
	Employees	0	0	2	4	8	14	16	16	16	14	16	18	20	20	20	20	18	16	14
Casual Restaurant	Customers	0	0	1	2	4	11	31	37	31	28	25	31	33	37	37	37	35	31	26
	Employees	0	1	1	2	3	5	6	6	5	5	6	6	7	7	7	7	6	6	5
Library	Customers	0	3	5	8	10	9	8	8	6	5	4	2	1	1	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0
Residential	Apartments	170	148	134	124	116	100	102	100	102	104	112	131	145	160	163	167	168	170	170
	Condo/Home	234	204	185	171	159	138	140	138	140	143	154	180	199	220	225	229	232	234	234
Bank	Visitors	0	0	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	2	3	7	7	5	5	4	3	3	3	1	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	6	8	8	10	9	8	6	4	3	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	0	1	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0
	Employees	1	6	11	22	28	28	25	25	26	25	19	17	6	3	0	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
	Employees	1	3	4	5	5	5	5	5	5	4	2	1	0	0	0	0	0	0	0
<b>Total Demand</b>	Visitors	54	59	70	86	101	148	202	238	223	223	206	255	299	328	326	320	288	236	182
	Employees	4	16	34	54	73	83	82	81	79	71	64	61	51	49	45	44	39	32	26
	Residents	404	352	319	295	275	238	242	238	242	247	266	311	344	380	388	396	400	404	404
		<b>462</b>	<b>427</b>	<b>423</b>	<b>435</b>	<b>449</b>	<b>469</b>	<b>526</b>	<b>557</b>	<b>544</b>	<b>541</b>	<b>536</b>	<b>627</b>	<b>694</b>	<b>757</b>	<b>759</b>	<b>760</b>	<b>727</b>	<b>672</b>	<b>612</b>

PEAK HOUR =

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit B: Current Peak Weekend Demand Projections

WEEKEND																				
Land Use	User	6:00 am	7:00 am	8:00 am	9:00 am	10:00	11:00	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00	11:00	Midnite
						am	am											PM	PM	
Retail	Customers	0	0	2	4	8	16	19	22	23	23	21	17	15	13	12	8	9	3	0
	Employees	0	1	1	5	5	5	6	6	6	6	5	5	4	4	4	3	2	1	0
Social Club	Customers	0	0	0	0	0	12	27	19	19	34	49	63	92	120	135	135	128	113	92
	Employees	0	3	4	6	9	10	11	11	11	11	11	11	12	14	14	14	14	14	13
Bar/Restaurant	Customers	0	0	0	0	0	56	94	63	50	50	44	75	113	119	125	125	119	106	94
	Employees	0	1	1	2	4	9	13	11	11	11	11	15	22	22	22	22	20	18	13
Casual Restaurant	Customers	0	0	0	0	0	24	54	40	27	27	27	35	54	57	61	61	59	51	43
	Employees	0	1	1	2	2	4	7	7	6	6	6	8	11	11	11	11	10	10	8
Library	Customers	0	2	4	6	8	7	6	6	5	4	3	1	0	0	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0
Residential	Apartments	170	162	150	138	126	121	121	119	121	124	128	138	145	148	156	162	163	167	170
	Condo/Hom	234	222	206	190	173	166	166	164	166	171	176	190	199	204	215	222	225	229	234
Bank	Visitors	0	1	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	4	7	7	5	4	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	5	6	6	8	7	6	5	3	2	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	2	3	3	2	2	1	1	1	1	1	1	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	54	58	69	80	87	183	266	210	184	195	198	245	328	363	387	383	369	327	283
	Employees	2	12	21	30	36	47	54	47	44	39	37	42	51	53	52	50	46	43	34
	Residents	404	384	356	328	299	287	287	283	287	295	304	328	344	352	371	384	388	396	404
		460	454	446	438	422	517	607	540	515	529	539	615	723	768	810	817	803	766	721

PEAK HOUR =

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

#### Exhibit C: Current Weekday Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 8:00 PM	April 8:00 PM	May 8:00 PM	June 8:00 PM	July 8:00 PM	August 8:00 PM	September 8:00 PM	October 8:00 PM	November 8:00 PM	December 8:00 PM
Retail	Customers	13	13	21	21	21	21	21	21	22	22	22	24
	Employees	5	5	7	7	7	7	7	7	7	7	7	8
Social Club	Customers	115	115	109	103	97	91	85	79	85	97	109	121
	Employees	12	12	12	11	10	10	9	8	9	10	12	13
Bar/Restaurant	Customers	101	101	96	96	91	81	81	86	91	96	101	96
	Employees	20	20	19	19	18	16	16	17	18	19	20	19
Casual Restaurant	Customers	37	37	35	35	33	30	30	31	33	35	37	35
	Employees	7	7	7	7	6	6	6	6	6	7	7	7
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	167	167	155	163	139	98	82	90	147	163	163	155
	Condo/Home	229	229	213	225	191	135	112	124	202	225	225	213
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	317	320	318	309	299	280	274	274	285	307	326	333
	Employees	44	44	45	44	41	39	38	38	40	43	46	47
	Residents	396	396	368	388	330	233	194	214	349	388	388	368
	<b>Total</b>	<b>757</b>	<b>760</b>	<b>731</b>	<b>741</b>	<b>670</b>	<b>552</b>	<b>506</b>	<b>526</b>	<b>674</b>	<b>738</b>	<b>760</b>	<b>748</b>

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit D: Current Weekend Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 9:00 PM	April 9:00 PM	May 9:00 PM	June 9:00 PM	July 9:00 PM	August 9:00 PM	September 9:00 PM	October 9:00 PM	November 9:00 PM	December 9:00 PM
Retail	Customers	8	8	9	9	9	9	9	9	9	9	9	10
	Employees	3	3	4	4	4	4	4	4	4	4	4	4
Social Club	Customers	135	135	128	121	114	107	99	92	99	114	128	142
	Employees	14	14	14	13	12	11	11	10	11	12	14	15
Bar/Restaurant	Customers	125	125	119	119	113	100	100	106	113	119	125	119
	Employees	22	22	21	21	20	18	18	19	20	21	22	21
Casual Restaurant	Customers	61	61	58	58	55	49	49	52	55	58	61	58
	Employees	11	11	10	10	10	9	9	9	10	10	11	10
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	162	162	153	162	137	97	81	89	145	162	162	153
	Condo/Home	222	222	211	222	189	133	111	122	200	222	222	211
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	380	383	371	361	348	322	314	316	330	357	380	386
	Employees	50	50	49	48	46	42	42	42	45	47	51	50
	Residents	384	384	364	384	326	230	192	211	345	384	384	364
	<b>Total</b>	<b>814</b>	<b>817</b>	<b>784</b>	<b>793</b>	<b>720</b>	<b>594</b>	<b>548</b>	<b>569</b>	<b>720</b>	<b>788</b>	<b>815</b>	<b>800</b>



# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit E: 2011 Peak Weekday Demand Projections

Land Use	User	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Midnite
Retail	Customers	0	2	4	10	17	23	27	28	27	26	23	21	22	24	24	16	8	4	0
	Employees	0	1	4	5	7	8	8	8	8	8	8	7	7	7	7	7	4	1	0
Social Club	Customers	0	0	0	0	1	14	26	32	39	46	54	79	103	115	115	115	102	79	56
	Employees	0	2	4	6	12	12	12	12	11	10	10	10	11	12	12	12	12	9	7
Bar/Restaurant	Customers	0	0	0	0	0	28	55	84	69	71	55	81	108	123	123	123	111	84	57
	Employees	0	0	3	5	10	18	20	20	20	18	20	23	25	25	25	25	23	20	18
Casual Restaurant	Customers	0	0	1	2	5	15	42	49	42	37	33	42	44	49	49	49	47	42	34
	Employees	0	1	2	3	5	7	8	8	7	7	8	9	10	10	10	10	9	8	7
Library	Customers	0	3	5	8	10	9	8	8	6	5	4	2	1	1	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0
Residential	Apartments	170	148	134	124	116	100	102	100	102	104	112	131	145	160	163	167	168	170	170
	Condo/Home	350	305	277	256	238	207	210	207	210	214	231	270	298	329	336	343	347	350	350
Bank	Visitors	0	0	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	2	3	7	7	5	5	4	3	3	3	1	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	6	8	8	10	9	8	6	4	3	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	1	1	3	3	2	2	2	1	1	1	0	0	0	0	0	0	0
	Employees	2	8	16	31	39	39	35	35	37	35	27	23	8	4	0	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
	Employees	1	3	4	5	5	5	5	5	5	4	2	1	0	0	0	0	0	0	0
<b>Total Demand</b>	Visitors	54	60	72	87	106	162	228	271	252	248	228	284	333	366	365	357	322	263	201
	Employees	5	18	42	66	89	102	100	99	98	89	80	76	62	59	54	54	48	38	32
	Residents	520	453	411	380	354	307	312	307	312	318	343	401	443	489	499	510	515	520	520
		<b>579</b>	<b>531</b>	<b>525</b>	<b>533</b>	<b>549</b>	<b>571</b>	<b>640</b>	<b>677</b>	<b>662</b>	<b>655</b>	<b>651</b>	<b>761</b>	<b>838</b>	<b>914</b>	<b>918</b>	<b>921</b>	<b>885</b>	<b>821</b>	<b>753</b>

PEAK HOUR =

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit F: 2011 Peak Weekend Demand Projections

Land Use	User	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Midnite
Retail	Customers	0	0	2	4	10	19	23	26	28	28	25	20	18	16	15	10	11	4	0
	Employees	0	1	1	6	6	7	7	7	7	7	6	6	5	5	5	4	3	1	0
Social Club	Customers	0	0	0	0	0	12	27	19	19	34	49	63	92	120	135	135	128	113	92
	Employees	0	3	4	6	9	10	11	11	11	11	11	11	12	14	14	14	14	14	13
Bar/Restaurant	Customers	0	0	0	0	0	69	115	77	61	61	54	92	138	145	153	153	145	130	115
	Employees	0	1	1	3	5	11	16	14	14	14	14	19	27	27	27	27	24	22	16
Casual Restaurant	Customers	0	0	0	0	0	32	71	53	36	36	36	47	71	76	81	81	78	68	57
	Employees	0	1	1	2	3	6	8	8	7	7	7	10	14	14	14	14	13	13	10
Library	Customers	0	2	4	6	8	7	6	6	5	4	3	1	0	0	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0
Residential	Apartments	170	162	150	138	126	121	121	119	121	124	128	138	145	148	156	162	163	167	170
	Condo/Home	350	333	308	284	259	249	249	245	249	256	263	284	298	305	322	333	336	343	350
Bank	Visitors	0	1	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	4	7	7	5	4	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	5	6	6	8	7	6	5	3	2	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	3	3	4	4	3	2	2	2	1	1	1	1	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0
<b>Total Demand</b>	Visitors	54	58	69	80	89	207	308	241	209	220	221	277	373	411	438	433	416	369	318
	Employees	2	12	21	33	40	54	60	53	49	45	43	49	60	62	61	59	54	50	39
	Residents	520	495	458	422	385	370	370	364	370	380	391	422	443	453	478	495	499	510	520
		<b>576</b>	<b>565</b>	<b>548</b>	<b>535</b>	<b>514</b>	<b>631</b>	<b>738</b>	<b>658</b>	<b>628</b>	<b>645</b>	<b>655</b>	<b>748</b>	<b>876</b>	<b>926</b>	<b>977</b>	<b>987</b>	<b>969</b>	<b>929</b>	<b>877</b>

PEAK HOUR =

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit G: 2011 Weekday Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 9:00 PM	April 9:00 PM	May 8:00 PM	June 8:00 PM	July 7:00 PM	August 7:00 PM	September 8:00 PM	October 9:00 PM	November 9:00 PM	December 8:00 PM
Retail	Customers	16	16	17	17	25	25	26	26	27	18	18	30
	Employees	7	7	7	7	8	8	8	8	8	7	7	9
Social Club	Customers	115	115	109	103	97	91	85	79	85	97	109	121
	Employees	12	12	12	11	10	10	9	8	9	10	12	13
Bar/Restaurant	Customers	123	123	117	117	111	98	98	105	111	117	123	117
	Employees	25	25	24	24	23	20	20	21	23	24	25	24
Casual Restaurant	Customers	49	49	47	47	44	39	39	42	44	47	49	47
	Employees	10	10	10	10	9	8	8	9	9	10	10	10
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	167	167	158	167	139	98	80	88	147	167	167	155
	Condo/Home	343	343	326	343	286	202	165	181	302	343	343	319
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	1	1	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	3	4	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	354	357	347	338	334	310	305	309	321	336	356	372
	Employees	54	54	53	52	50	46	49	51	49	51	54	56
	Residents	510	510	484	510	425	300	245	269	449	510	510	474
	<b>Total</b>	<b>918</b>	<b>921</b>	<b>884</b>	<b>900</b>	<b>809</b>	<b>656</b>	<b>599</b>	<b>629</b>	<b>819</b>	<b>897</b>	<b>920</b>	<b>902</b>

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

#### Exhibit H: 2011 Weekend Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 9:00 PM	April 9:00 PM	May 9:00 PM	June 9:00 PM	July 9:00 PM	August 9:00 PM	September 9:00 PM	October 9:00 PM	November 9:00 PM	December 9:00 PM
Retail	Customers	10	10	10	10	10	10	10	10	11	11	11	12
	Employees	4	4	5	5	5	5	5	5	5	5	5	5
Social Club	Customers	135	135	128	121	114	107	99	92	99	114	128	142
	Employees	14	14	14	13	12	11	11	10	11	12	14	15
Bar/Restaurant	Customers	153	153	145	145	138	122	122	130	138	145	153	145
	Employees	27	27	26	26	24	22	22	23	24	26	27	26
Casual Restaurant	Customers	81	81	77	77	73	65	65	69	73	77	81	77
	Employees	14	14	13	13	13	11	11	12	13	13	14	13
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	162	162	153	162	137	97	81	89	145	162	162	153
	Condo/Home	333	333	316	333	283	200	166	183	299	333	333	316
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	430	433	417	407	392	361	353	358	375	404	430	433
	Employees	59	59	58	57	54	49	49	50	53	56	60	59
	Residents	495	495	469	495	420	297	247	272	444	495	495	469
	<b>Total</b>	<b>984</b>	<b>987</b>	<b>944</b>	<b>959</b>	<b>866</b>	<b>707</b>	<b>649</b>	<b>680</b>	<b>872</b>	<b>955</b>	<b>985</b>	<b>961</b>

# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit I: 2016 Peak Weekday Demand Projections

Land Use	Users	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Midnite
Retail	Customers	0	2	4	12	21	28	32	33	32	31	28	26	27	30	29	19	10	4	0
	Employees	0	1	4	5	7	8	8	8	8	8	8	7	7	7	7	7	4	1	0
Social Club	Customers	0	0	0	0	1	14	26	32	39	46	54	79	103	115	115	115	102	79	56
	Employees	0	2	4	6	12	12	12	12	12	11	10	10	11	12	12	12	12	9	7
Bar/Restaurant	Customers	0	0	0	0	0	34	66	100	82	85	66	97	129	147	147	147	132	100	68
	Employees	0	0	3	5	10	18	20	20	20	18	20	23	25	25	25	25	23	20	18
Casual Restaurant	Customers	0	0	1	3	6	18	50	59	50	44	40	50	53	59	59	59	56	50	41
	Employees	0	1	2	3	5	7	8	8	7	7	8	9	10	10	10	10	9	8	7
Library	Customers	0	3	5	8	10	9	8	8	6	5	4	2	1	1	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0
Residential	Apartments	180	157	142	131	122	106	108	106	108	110	119	139	153	169	173	176	178	180	180
	Condo/Home	371	323	293	271	252	219	223	219	223	226	245	286	315	349	356	364	367	371	371
Bank	Visitors	0	0	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	2	3	7	7	5	5	4	3	3	3	1	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	6	8	8	10	9	8	6	4	3	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	1	2	4	4	3	3	2	2	2	2	0	0	0	0	0	0	0
	Employees	2	8	16	33	41	41	37	37	39	37	29	25	8	4	0	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
	Employees	1	3	4	5	5	5	5	5	5	4	2	1	0	0	0	0	0	0	0
<b>Total Demand</b>	Visitors	54	60	72	91	112	177	253	303	278	275	252	314	368	406	404	394	354	287	219
	Employees	5	18	42	68	91	104	102	101	100	91	82	78	62	59	54	54	48	38	32
	Residents	551	480	435	402	374	325	331	325	331	336	364	425	468	518	529	540	545	551	551
		<b>610</b>	<b>558</b>	<b>549</b>	<b>561</b>	<b>577</b>	<b>606</b>	<b>686</b>	<b>729</b>	<b>709</b>	<b>702</b>	<b>698</b>	<b>817</b>	<b>898</b>	<b>983</b>	<b>987</b>	<b>988</b>	<b>947</b>	<b>876</b>	<b>802</b>

PEAK HOUR =



# PHASE II MAIN STREET PARKING STUDY

## SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

### Exhibit J: 2016 Peak Weekend Demand Projections

Land Use	Users	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Midnite
Retail	Customers	0	0	3	5	11	23	27	32	34	34	30	25	21	19	18	12	13	4	0
	Employees	0	1	1	6	6	7	7	7	7	7	6	6	5	5	5	4	3	1	0
Social Club	Customers	0	0	0	0	0	12	27	19	19	34	49	63	92	120	135	135	128	113	92
	Employees	0	3	4	6	9	10	11	11	11	11	11	11	12	14	14	14	14	14	13
Bar/Restaurant	Customers	0	0	0	0	0	82	137	92	73	73	64	110	165	174	183	183	174	156	137
	Employees	0	1	1	3	5	11	16	14	14	14	14	19	27	27	27	27	24	22	16
Casual Restaurant	Customers	0	0	0	0	0	38	86	65	43	43	43	57	86	92	98	98	94	82	69
	Employees	0	1	1	2	3	6	8	8	7	7	7	10	14	14	14	14	13	13	10
Library	Customers	0	2	4	6	8	7	6	6	5	4	3	1	0	0	0	0	0	0	0
	Employees	1	1	2	2	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0
Residential	Apartments	180	171	158	146	133	128	128	126	128	131	135	146	153	157	166	171	173	176	180
	Condo/Home	371	352	326	301	275	263	263	260	263	271	278	301	315	323	341	352	356	364	371
Bank	Visitors	0	1	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	1	4	7	7	5	4	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	54	54	57	60	60	60	60	60	60	57	54	54	54	54	54	54	54	54	54
	Employees	1	2	5	6	6	8	7	6	5	3	2	2	1	1	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	3	3	4	4	3	2	2	2	1	1	1	1	0	0	0	0
Post Office	Visitors	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0
<b>Total Demand</b>	Visitors	54	58	70	81	90	230	349	274	234	245	243	310	418	459	488	482	463	409	352
	Employees	2	12	21	33	40	54	60	53	49	45	43	49	60	62	61	59	54	50	39
	Residents	551	523	484	447	408	391	391	386	391	402	413	447	468	480	507	523	529	540	551
		<b>607</b>	<b>593</b>	<b>575</b>	<b>561</b>	<b>538</b>	<b>675</b>	<b>800</b>	<b>713</b>	<b>674</b>	<b>692</b>	<b>699</b>	<b>806</b>	<b>946</b>	<b>1,001</b>	<b>1,056</b>	<b>1,064</b>	<b>1,046</b>	<b>999</b>	<b>942</b>

PEAK HOUR =

## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

#### Exhibit K: 2016 Weekday Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 8:00 PM	April 8:00 PM	May 8:00 PM	June 8:00 PM	July 7:00 PM	August 7:00 PM	September 8:00 PM	October 8:00 PM	November 8:00 PM	December 8:00 PM
Retail	Customers	19	19	30	30	30	30	31	31	32	32	32	36
	Employees	7	7	8	8	8	8	8	8	8	8	8	9
Social Club	Customers	115	115	109	103	97	91	85	79	85	97	109	121
	Employees	12	12	12	11	10	10	9	8	9	10	12	13
Bar/Restaurant	Customers	147	147	140	140	132	118	118	125	132	140	147	140
	Employees	25	25	24	24	23	20	20	21	23	24	25	24
Casual Restaurant	Customers	59	59	56	56	53	47	47	50	53	56	59	56
	Employees	10	10	10	10	9	8	8	9	9	10	10	10
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	176	176	164	173	147	104	85	93	156	173	173	164
	Condo/Home	364	364	338	356	303	214	174	192	321	356	356	338
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	1	1	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	4	4	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	391	394	392	383	369	343	338	342	356	382	404	410
	Employees	54	54	54	53	50	46	50	51	49	52	55	56
	Residents	540	540	502	529	450	318	259	285	477	529	529	502
	<b>Total</b>	<b>985</b>	<b>988</b>	<b>948</b>	<b>965</b>	<b>869</b>	<b>707</b>	<b>647</b>	<b>678</b>	<b>882</b>	<b>963</b>	<b>988</b>	<b>968</b>



## PHASE II MAIN STREET PARKING STUDY

### SUPPLY/DEMAND AND ALTERNATIVES ANALYSIS



PROJECT # 16-1870.00

#### Exhibit L: 2016 Weekend Summary of Peak Hour Demand Projections

Land Use	User	January 9:00 PM	February 9:00 PM	March 9:00 PM	April 9:00 PM	May 9:00 PM	June 9:00 PM	July 8:00 PM	August 9:00 PM	September 9:00 PM	October 9:00 PM	November 9:00 PM	December 9:00 PM
Retail	Customers	12	12	12	12	12	12	19	12	13	13	13	15
	Employees	4	4	5	5	5	5	5	5	5	5	5	5
Social Club	Customers	135	135	128	121	114	107	99	92	99	114	128	142
	Employees	14	14	14	13	12	11	11	10	11	12	14	15
Bar/Restaurant	Customers	183	183	174	174	165	146	146	156	165	174	183	174
	Employees	27	27	26	26	24	22	22	23	24	26	27	26
Casual Restaurant	Customers	98	98	93	93	88	78	78	83	88	93	98	93
	Employees	14	14	13	13	13	11	11	12	13	13	14	13
Library	Customers	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Residential	Apartments	171	171	162	171	145	103	83	94	154	171	171	162
	Condo/Home	352	352	335	352	300	211	171	194	317	352	352	335
Bank	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Medical Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Service Station	Visitors	51	54	57	54	57	57	57	57	54	57	57	57
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
General Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	1	0	0	0	0	0
Post Office	Visitors	0	0	0	0	0	0	0	0	0	0	0	0
	Employees	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	Visitors	479	482	464	454	436	400	399	400	419	451	479	481
	Employees	59	59	58	57	54	49	50	50	53	56	60	59
	Residents	523	523	497	523	445	314	254	288	471	523	523	497
	<b>Total</b>	<b>1,061</b>	<b>1,064</b>	<b>1,019</b>	<b>1,034</b>	<b>935</b>	<b>763</b>	<b>703</b>	<b>738</b>	<b>943</b>	<b>1,030</b>	<b>1,062</b>	<b>1,037</b>